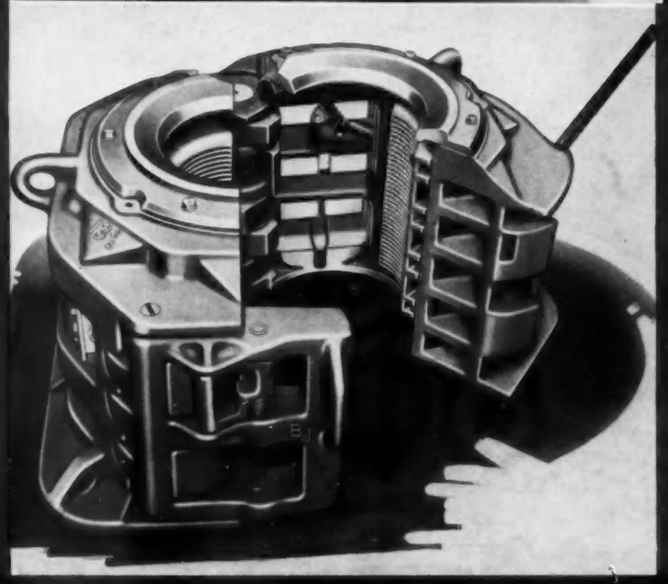
The New BJ CASING SPIDER

IT'S AS GOOD AS THE FAMOUS BJ TRIPLEX HOOK

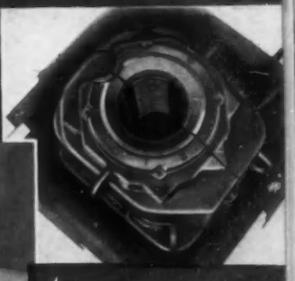
With door open and one slip removed. Note the heavy lugs, strong-type latch and strong, simple construction.

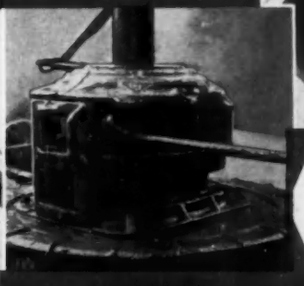


The BJ Casing Spider brings to the Oil Industry new standards of speed and safety in setting casing strings of any length. . . Crews everywhere have approved it on sight because . . . IT GRIPS INSTANTLY AND POSITIVELY . . . IT OPERATES RAPIDLY AND EASILY . . . IT IS READILY REMOVED BY MERELY OPENING THE DOOR.

When running casing, one of the crew holds the lever in lowered position so that the four slips are retracted and not engaged on the pipe. When the lever is in elevated position, the slips automatically move into gripping position and the door latch cannot be opened while the slips are supporting the casing.

Top guide plate prevents casing from dragging against the face of the . . .





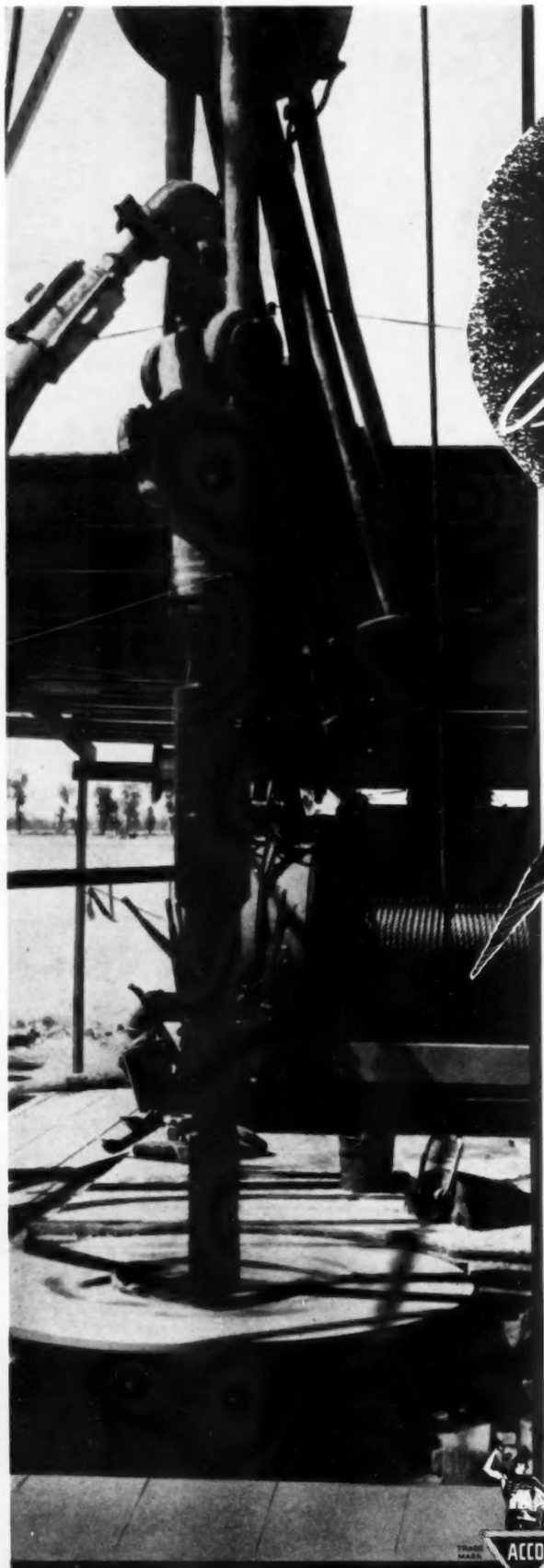
In position on rear table with lever lowered while running in casing.

The alloy steel body is completely heat treated and is of split-type with a strong hinge pin joining the two halves in the rear. A massive stirrup-type latch fits over large lugs to secure these halves in front. The four slips are 18 inches in length, and are designed with dovetail backs to provide instantaneous, uniform gripping action regardless of their vertical position in the body. To change from one size of slips to another only one bolt in each slip is removed. . . . no other operating mechanism is disturbed. . . . . slips of the desired size are quickly bolted in place.

Bowl capacity of the BJ Casing Spider is 500 tons; separate slips are available for casing sizes from 5½" to 13⅜". A.P.I. . . . Completely described in the BJ 1940 Catalog and on pages 496 and 497 of the 1940 Composite Catalog.

BYRON JACKSON CO.

Houston • LOS ANGELES • New York



American Cable TRU-LAY Preformed Rotary Lines don't object to work. Indeed, from its complete freedom from kinkiness, crankiness, orneriness, TRU-LAY Preformed seems to want to work. When you string your rig with TRU-LAY Preformed you'll find it doesn't fight the men who work with it; it doesn't snarl and jump into unruly tantrums. . . . Because TRU-LAY is preformed —flexible, relaxed. Then, once in place, you'll find TRU-LAY Preformed whips less, spools better, makes possible faster round trips. In rotary drilling insist on American Cable TRU-LAY Preformed Emerald Strand —the line that's *safer* for both men and production economy.

In cable tool work specify American Cable CRESCENT Non-preformed. There is the line with the reach —the line that possesses the same built-in quality of other ACCO Products whether for American Cable Wire Lines—American Welded and Weldless Chains —Ford Chain Blocks—Page Welding Wire—Reading-Pratt & Cady Valves—or any of the other 137 ACCO Quality Products.

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AMERICAN CHAIN & CABLE COMPANY, Inc.

BOTTLENECKING THE HOLE FOR BETTER CEMENTING

One of 12 Practical Field Applications For The BAKER ROTARY WALL SCRAPER

The BAKER ROTARY WALL SCRAPER...

combines the following features, which are vitally essential to efficient, economical operation:

★Maximum expansion range on cutter blades (from 4" to 36" expansion using only six bodies)

★Blades that contact side of the hole a sufficient distance to give good bearing surface on formation (minimizes possibility of "corkscrewing" hole; assures an even cut on all sides of the hole and permits faster downward feeding with more hole per hour)

★Full circulating force directed on cutting blades (assures cuttings being removed quickly and blades being cooled and well lubricated)

and the BAKER WALL SCRAPER is really *TWO TOOLS IN ONE*

2 TOOLS IN 1 SCRAPER SAMPLER

as, by merely substituting Sampler Blades for the regular Scraper Blades converts this tool into a Baker Wall Sampler, an efficient device that takes actual cores from the side wall of any uncased hole.

Important Applications

Enlarging Holes for Casing

Cleaning Up Oil Sands

Setting Liners

Setting Cement Plugs

Bottlenecking for Cement Jobs

Removing Sections of Drillable Pipe

Water Shut-Off Tests

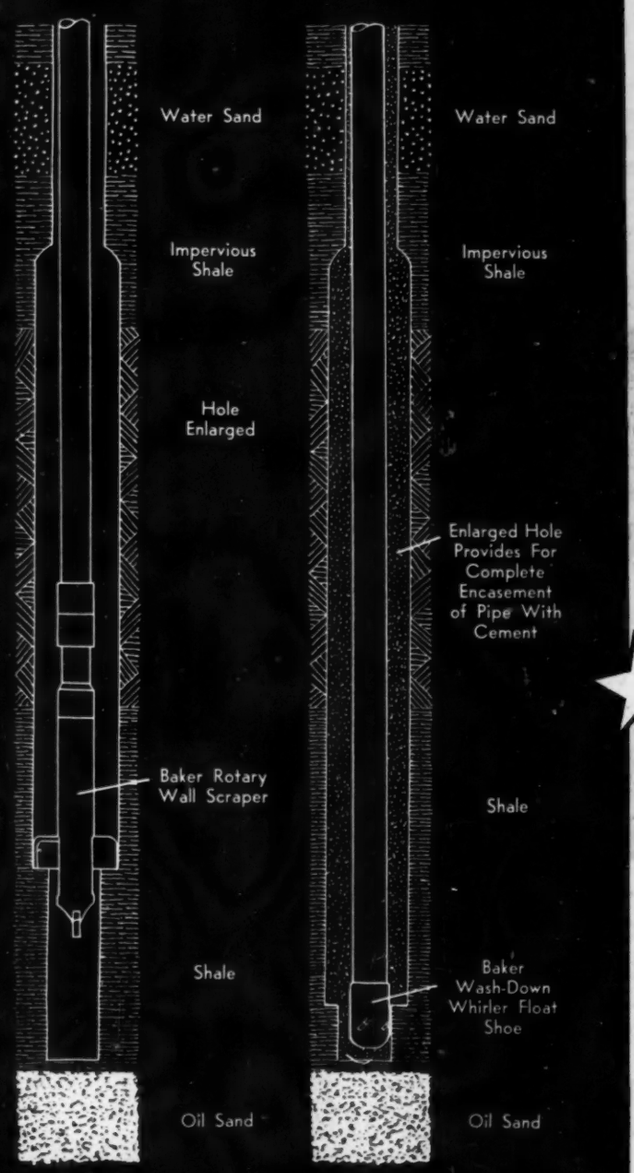
Sidetracking

Straightening Holes

Fishing Jobs

Enlarging Holes for Gravel Packing

Side Wall Sampling (by converting Scraper into Baker Wall Sampler)



The Baker Rotary Wall Scraper is used to enlarge the hole so that cement will be sure to surround the casing completely and with greater thickness

Cement in the enlarged hole forms a uniform plug — and channels which might have resulted from contact with the wall have been eliminated

Send for Baker Broadcast No. 19

BAKER ROTARY WALL SCRAPER

BAKER OIL TOOLS, INC.
P. O. Box 127, Vernon Station
LOS ANGELES, CALIFORNIA
HOUSTON, TEXAS
NEW YORK, N. Y.

FORESIGHT

30 Years Ago

Thirty years ago when Norvell-Wilder started serving the oil industry we noticed that certain oil men always made a practice of ramroding through the ways and means of getting the best equipment that could be bought in their day.

The foresight of these men, who even in that early period of the oil industry were not deluded by the false economy of using obsolete equipment, is revealed in the prominent positions they hold today in companies they have had a major part in building.

FORESIGHT

for the Next 30 Years

Oil men who are looking ahead to the deep wells and high pressures of the next three decades find Norvell-Wilder better prepared than ever to serve them with large stocks of the most modern equipment at:

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When the mile mark of another thirty years is reached, we know that the men who are insisting on operating with good equipment today will be reaping the rewards for their foresight.

For appreciative, friendly service day or night call:

Norvell-Wilder

Supply Company

LOOKING AHEAD

WITH THE EDITOR

BOOM TOWN, current movie attraction, is a good picture done in oil. At last a fiction writer and a producer have caught some of the true he-man romance of the industry with a resultant screen version devoid of the stomach-turning absurdities that have marked previous attempts. The public will be impressed, though they do not recognize the subtle propaganda, while oil men will enjoy an extra chuckle at the obvious plug for conservation practices which in the plot provides an excuse for the government to move in on the hero with a villainous anti-trust suit. Off-hand we can't recall counterparts to glamorous Claudette Colbert or Hedy Lamarr in the hectic days at Burkburnett but they add to the vision as you re-live, with the picture, the rapid succession of oil field booms down to Kettleman Hills. Booms may come and booms may go but our promotional department observes that the Texas-Louisiana Gulf Coast is now in its fortieth boom year of oil activity. Since the turn of the century when the Spindletop discovery attracted world-wide attention we find this area has never seen a time when its activity has fallen below boom proportions. Today, it is still the nation's number one oil province from the standpoint of established reserves, rate of new discoveries and number of potential prospects. Data being compiled for the special Gulf Coast Number of THE OIL WEEKLY to be published September 23, show the area has 240 producing oil fields of which 41 are new fields discovered during the past 18 months and more than 300 known potentially productive salt domes and other structures. Complete information on each of these fields and prospects, any of which in former days might have precipitated a rip-roaring boom, will be found in the forthcoming Gulf Coast Number.

WELL STUDIES as known today have been in existence but a very short period of time, but there has arisen an ever-expanding appreciation of their value. In this day with the necessity for the highest degree of lifting efficiency, due to the passing of the once "house of plenty," modern well studies are the basic principle for the selection of equipment, its installation and operation. The outstanding work contributed to this field, assimilated with practical experience obtained through numerous individual well studies, is to be gathered into a complete picture or form readily usable by the average production man and engineer. This four-part series of articles is to be commenced in an early issue.

The OIL WEEKLY, Published every Monday. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

Before Your Next Cutting Job Comes — Know the Facts About

Before Your Next Cutting Job Comes — Know the Facts About

BAASH-ROSS *Internal* PIPE CUTTERS

CUT TUBING BAASH-ROSS Internal Pipe Cutters for plain and external upset tubing are *run on sucker rods* or "macaroni" (small diameter pipe). On a pumping well, no special tubing need be transported to the well. The Baash-Ross Internal Pipe Cutter provides a quick, safe and economical method of removing free tubing above the point at which the string is stuck. The weight required to feed the cutting knives is easily controlled, hence the tubing is cut smoothly with minimum torque on the sucker rod string and without binding.

CUT DRILL PIPE By running a BAASH-ROSS Internal Pipe Cutter on tubing of sufficient clearance, a single internal cut made just above the point at which the drill pipe is stuck will, in the majority of cases, enable you to remove most of the string at once. The remainder can then be washed over, cut off and removed with the BAASH-ROSS *External* Drill Pipe Cutter. All sizes of drill pipe 2⅞" and larger, whether equipped with A.P.I. full hole tool joints or any of the special full hole or internal flush joints, can be cut quickly and economically.

CUT CASING and liners. Any number of cuts can be made on a single run of the BAASH-ROSS Internal Pipe Cutter, starting at the lowest point and working up to the point where the pipe is free. Cuts are made quickly and at small expense. BAASH-ROSS Internal Pipe Cutters are available on a service basis—operated by experienced service men —oil men—in all active fields in the United States, and are sold outright with complete operating instructions for export.

AND CUTS THEM ALL

Successfully & Economically

Many cuts can be made on one run of the BAASH-ROSS Internal Pipe Cutter without pulling it from the hole. The cut-off pieces are removed with a spear or other fishing tool.

BAASH ROSS
TOOL COMPANY
OIL WELL TOOLS · SPECIALTIES
LOS ANGELES
HOUSTON · NEW YORK

Safe!

While running in the hole the slips and cutting knives are securely locked in the retracted position. They automatically release from the pipe when the tool is raised—no chance of hanging up or bull-dogging at any time.

Quick!

Right-hand rotation puts the BAASH-ROSS Internal Pipe Cutter into operating condition. Continued right-hand rotation completes the cut. The design of the knives and the steel from which they are made — combined with the safe operating principles of the tool—insure speedy operation.

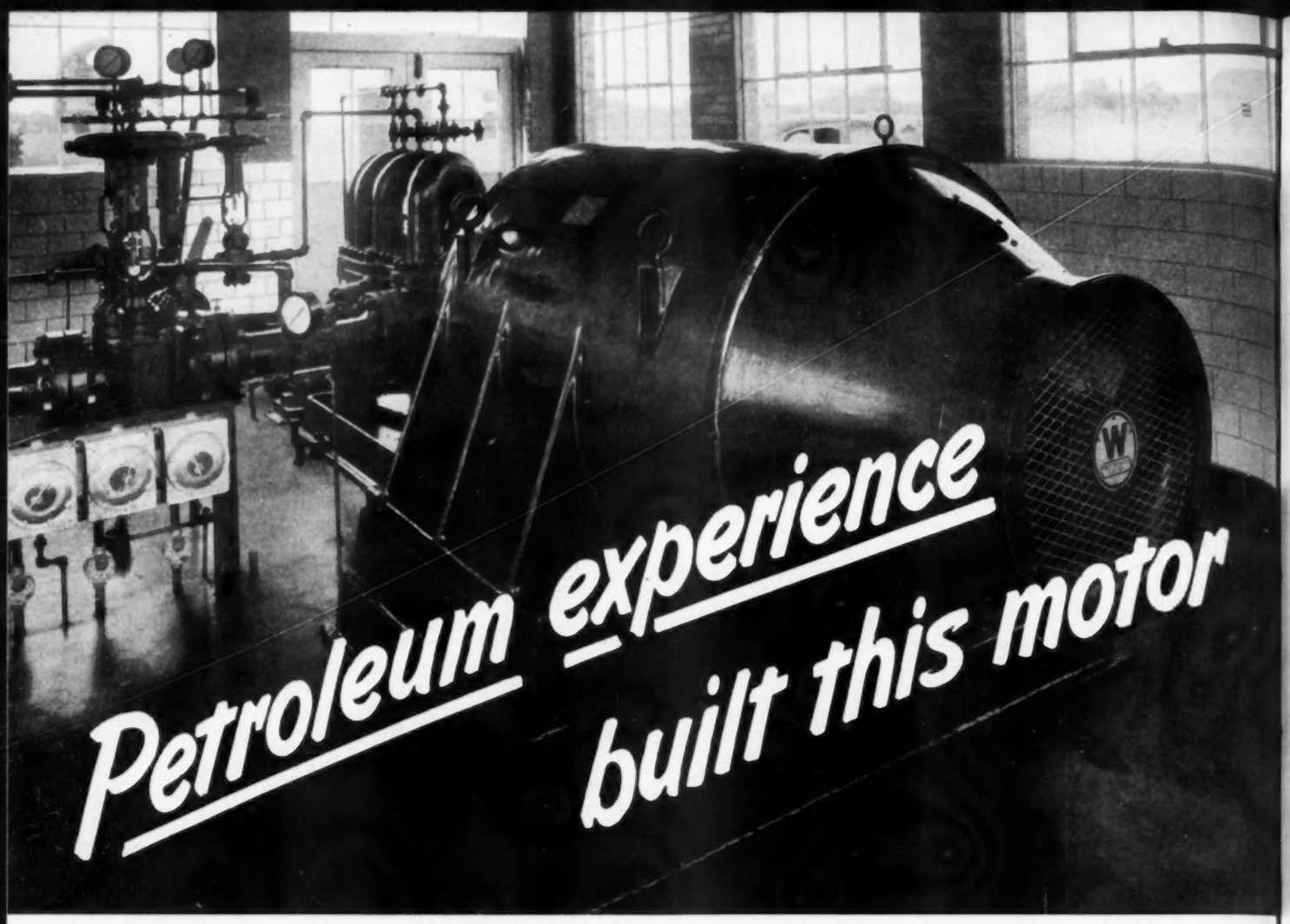
Easy!

The weight required to feed the cutting knives into the pipe can be accurately controlled; the coil spring acts as an equalizer to prevent over-pressure or under-pressure and insures efficient cutting action.

A Safe Cutter for INTERNAL UPSET DRILL PIPE

The Type A Cutter is equipped with slips which are mechanically, accurately set in the upset so that the Knives are in proper position to *make the cut through the pipe.* The view at right shows the operation with cut nearly completed.

Refer to Pages 196 and 197 of your 1940 Composite Catalog for Operating Details and Sizes, or Send for the BAASH-ROSS Catalog.



AND NOW IT'S "STANDARD" WHERE HIGH CAPACITIES ARE REQUIRED FOR PUMPS IN HAZARDOUS LOCATIONS

This Westinghouse explosion-resisting motor for refinery and pipe line service was the first large motor for "Hazardous Locations" to be built without the use of forced ventilation or external cooling equipment. Instead, it employs the long-proved dual ventilated frame originally developed by Westinghouse.

The design met the industry's needs so completely that it has now become "standard"—proved by the purchase of more Westinghouse motors of this type than those of all other manufacturers combined. It is available in ratings up to 1000 hp, 3600 rpm.

More than *electrical* ability was required to design these motors. Our engineers constantly study the petroleum industry and its needs. They appreciate the jobs that motors do—and what breakdowns can cost. So, they build electrical equipment in the light of this practical experience.

That's why it always pays to talk with your local Westinghouse representative when you have an electrical problem. You get "high test" ability that is ready to go to work for you. Try it, for your next electrical need.

THEIR EXPERIENCE WORKS FOR YOU

For more than 50 years, Westinghouse engineers have worked side by side with every branch of the petroleum industry, to develop electrical equipment to meet your specific requirements. Take advantage of this experience and ability on your next electrical problem.

Tune in "Musical Americana," N. B. C. Network, Coast-to-Coast, every Tuesday evening.

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EAST PITTSBURGH, PA.

J-94383

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ELECTRICAL PARTNER OF THE PETROLEUM INDUSTRY

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THE OIL WEEKLY

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The Oil Man's Calendar

SEPT.	
9–13	**American Chemical Society, Detroit.**
10	**American Institute of Mining & Metallurgical Engineers, East Texas Section, Kilgore.**
18–20	**National Petroleum Association, Atlantic City, N. J.**
30–Oct. 1	**Liquefied Petroleum Gas Association, Omaha, Neb.**
OCT.	
4	**Western Petroleum Refineries Association, Regional Meeting, Wichita.**
7–10	**American Gas Association, Atlantic City, N. J.**
7–11	**National Safety Congress and Exposition, Chicago.**
15	**National Stripper Well Association, Dallas.**
16–18	**Independent Petroleum Association of America, Dallas.**
17–18	**American Institute of Mining & Metallurgical Engineers, Petroleum Division, Los Angeles.**
24–26	**American Institute of Mining & Metallurgical Engineers, Petroleum Division, Tulsa.**
25	**Western Petroleum Refiners Association, Regional Meeting, Shreveport.**
31–Nov. 2	**Texas Mid-Continent Oil & Ga Association, Ft. Worth.**
NOV.	
1	**California Natural Gasoline Association, Los Angeles.**
	American Association of Petroleum Geologists, Pacific Section, Los Angeles.
11–15	**American Petroleum Institute, Chicago.**

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Volume 98, Number 13

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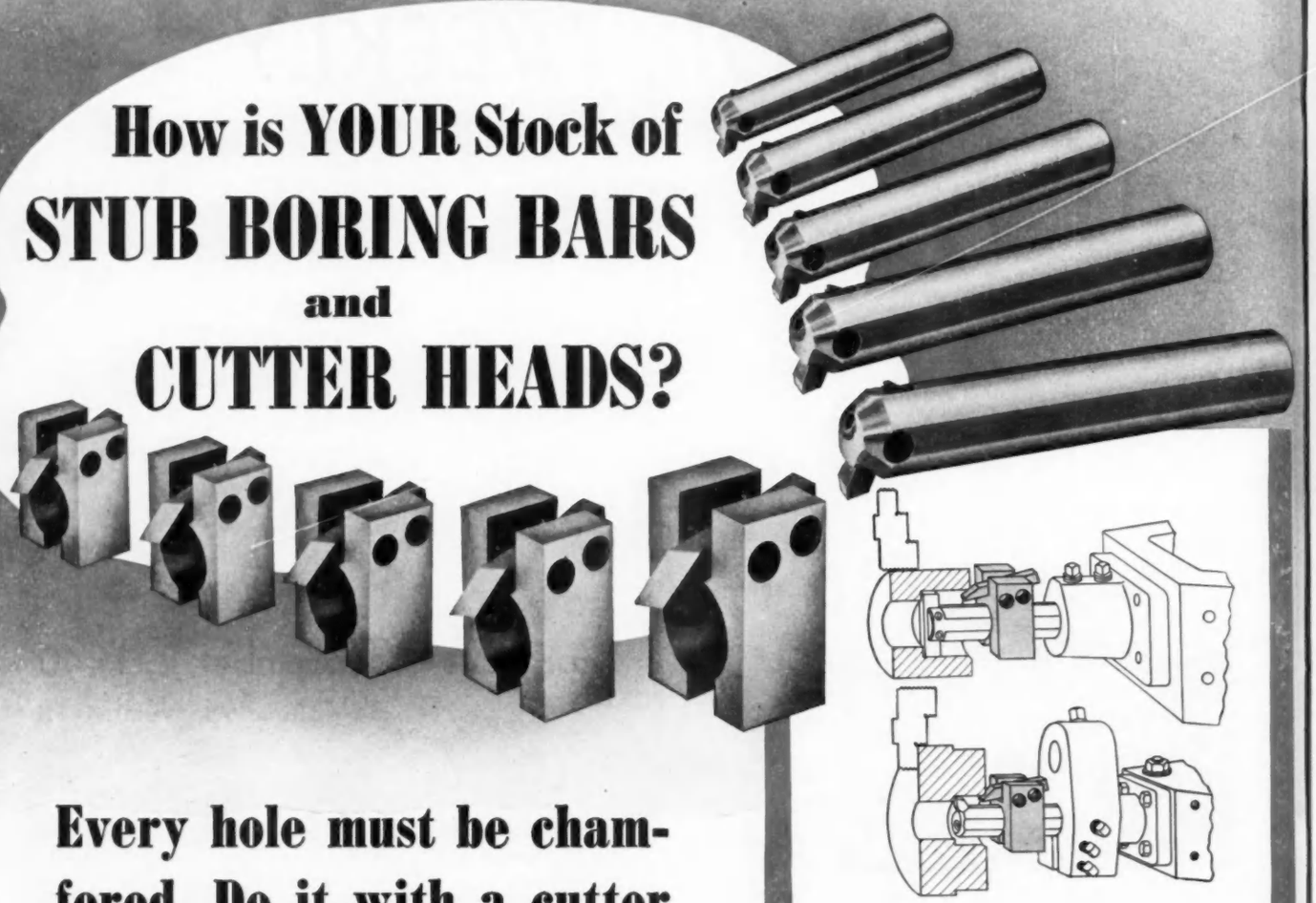
How is YOUR Stock of STUB BORING BARS and CUTTER HEADS?



Every hole must be chamfered. Do it with a cutter head on the same stub boring bar that bores the hole.

Save set-up time, indexing time and production time with the new Warner and Swasey combination of improved boring bars and cutter heads.

You can do rough or finish boring with these stub boring bars held in slide tools, multiple turning heads, tool holders or turret holes. Screws in the hardened and ground bars hold and adjust the cutter.

To chamfer holes, note above how the addition of the cutter head eliminates a second tool or a second operation. The heads clamp to the boring bar and are reversible and adjustable to permit a wide range of diameters to be chamfered.

Warner & Swasey Tool Catalog and Manual sent on request

MAIL YOUR ORDER

for a set of Angular Cutter Stub Boring Bars with Cutter Heads. Prices listed for your convenience on sizes and combinations, are F.O.B. Cleveland. Specify tool numbers when ordering.

Tool No. Bars	Tool No. Heads	Bar Size	Combined Price	
M-1760	M-1780	½"	$11.00	Set "A" $84.50
M-1761	M-1781	¾"	13.00	
M-1762	M-1782	1"	16.50	
M-1763	M-1783	1¼"	20.50	
M-1764	M-1784	1½"	23.50	
M-1765	M-1785	1¾"	27.00	Set "B" $144.00
M-1766	M-1786	2"	33.00	
M-1767	M-1787	2½"	39.00	
M-1768	M-1788	3"	45.00	

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Turret Lathes
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YOU CAN TURN IT BETTER, FASTER, FOR LESS . . . WITH WARNER & SWASEY TOOLS

THE OIL WEEKLY

SEPTEMBER 2, 1940

VOLUME 98 NUMBER 13

The Week's Panorama

BUSINESS indicators have continued to show advances, activity being about 15 percent greater now than at this time last year.

• • • Although the United States would face a major economic readjustment due to loss of foreign trade if Germany should win the war, some economists declare that such trade has been over-valuated. Much of it, they say, has been the result of false purchasing power which the U. S. created, by taking I.O.U.'s in the war period, by granting credits indiscriminately in the post-war era, and finally by accepting gold, which has come to be of questionable value.

• • • Trade with South America holds only limited possibilities of compensating for that lost elsewhere, it is pointed out, as the countries to the south are essentially not customers of the United States but, competitors, selling surplus production in Europe, in competition with U. S. commodities.

• • • The national defense program is counted upon to cushion any loss of foreign trade. Exports have totaled somewhat over $4,000,000,000 annually. But the country's armament program will call for government spending of more money than that in the current year. The defense program therefore might compensate for the loss of a large part of the foreign trade.

• • • Oil companies are taking advantage of the availability of borrowed money at lower and lower rates of interest, by repeatedly refinancing. Rates that appeared extremely low a few years ago now seem high, and worth-while savings are being made by refunding debt. Among the latest of such operations was the action of Tide Water Associated Oil Company, providing for the refunding of $34,750,000 of 15-year 3½ percent debentures that were issued in 1937. In the 11½ years of the unexpired term of the old issue, the company will save $3,328,050 through the refinancing, as the 3½ percent debentures will be replaced by $19,000,000 of 1- to 10-year serial notes with average interest of 2 percent annually and $16,500,000 of 15-year 2¾ percent sinking fund debentures, to be sold to a small group of banks and insurance companies.

• • • At the next meeting of the Association of American Railroads a plan will be presented for the formation of an air freight company to be owned jointly by the air lines and railroads. It is believed about 2 years would be required for basic studies and for perfecting cargo planes before actual air freight service could be started.

• • • It is estimated that cargo planes could operate at tariffs of 10 cents per ton mile, initially, and carry 10 tons of freight; and that rates could be lowered and capacity gradually increased within 5 years to 20 tons, against a present average capacity of 37 tons for railroad freight cars.

• • • The freight planes would travel 200 to 250 miles an hour, as compared with 40 m.p.h. for railway express, 36 m.p.h. for manifest freight, and 24 m.p.h. for regular freight.

• • • Legislation is being prepared under which Congress would be asked to provide funds for a $200,000,000 expansion of the country's airport facilities, in the interest of national defense. About 3500 ports would be involved, half of which would be new and half existing fields improved.

• • • American manufacturers currently are producing about 1500 high-powered aircraft engines monthly, and output is expected to rise to 2000 a month by early 1941 and to 4000 by late 1941.

• • • The world's largest airplane, the bomber under construction in California to be capable of flying to Europe and back, will have capacity for 11,000 gallons of gasoline, to fuel its four 2000-horsepower engines. That much gasoline, equivalent to 262 barrels, would fill an ordinary lease tank in an oil field, and would run for a day all the automobiles in a city of 35,000 population. The bomber is 112 feet long and has a wing spread of 212 feet.

• • • Few oil industry employees could have the jobs they hold if obliged to provide themselves the capital needed to make the jobs possible. One major company stated that the total investment in its domestic business to provide 35,576 jobs in the United States amounted to $623,677,123, an average of $17,531 for each job.

• • • The oil industry operates its automobiles and trucks with materially fewer accidents than industry as a whole. In 1939 there were only 1.28 accidents per 100,000 miles traveled by oil industry vehicles, compared with 2.13 for all commercial vehicles. Thus an average oil company vehicle would have one accident in traveling 77,845 miles, while the average commercial vehicle among all industries would have one accident for every 46,929 miles traveled.

Major Economies Result

Acre Well Spacing

By JOSEPH A. KORNFELD

TWENTY-ACRE spacing, first applied in western Kansas two years ago, has risen steadily in popularity. Today, it is the pattern employed in more than one-fifth of the proratable oil wells on production on the Central Kansas Uplift. Two out of every three wells brought in during the past year were staked on that plan. A saving of over $16,000,000 in development costs are estimated to have resulted from adoption of 20-acre spacing, a difference of 15.5 cents per barrel of new reserve added for the 11-month period since September, 1939, when the acreage factor was introduced into Kansas proration allowables. When this economy is weighed against the additional reserve of 107,250,000 barrels developed by these wells, the saving assumes greater importance. In less than a year, the percentage of 20-acre spaced wells has jumped from 10 to 20 percent, and new oil wells drilled on this pattern are being brought in at the rate of from 90 to 126 each month in western Kansas. This wider spacing program, besides eliminating the drilling of many unnecessary wells, is expected to result in retarded encroachment of edge water, thus achieving a greater recovery per acre of the original reservoir reserves.

The rapid fluctuations in the net volume of proratable oil as shown by the monthly state allowables (from 109,000 to 128,000 barrels monthly) in the face of unsteady markets and a steady well completion rate, precludes ascertaining a definite trend in the per well allowable. Obviously, 20-acre spacing and its widespread adoption has checked materially the decline in the per well allowable through the saving of approximately 715 wells during the 11-month period dating from August, 1939.

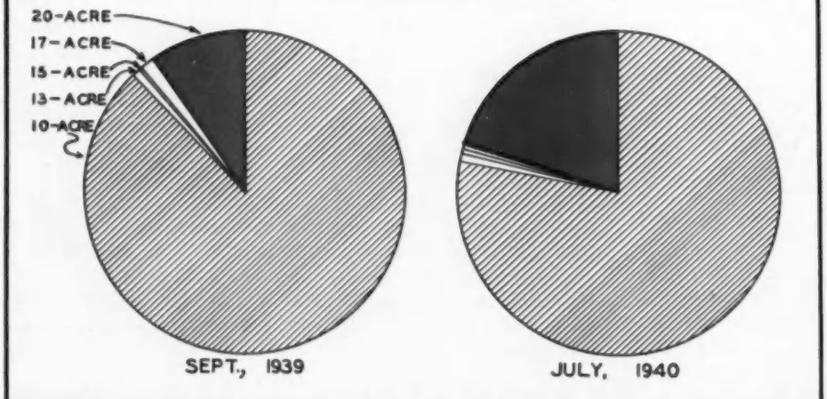
The importance of 20-acre spaced wells in new development is shown by the fact that more than 66 percent of all new completions were staked on that pattern for the same period referred to above; thus 715 out of 1079 total oil well completions in Kansas were drilled on 20-acre spacing. In other words, two out of every three oil wells brought in during the past year in Kansas were staked on that plan. A statistical gain of 236 percent has been recorded from the official figures obtained from the Kansas Corporation Commission, as shown on an accompanying chart.

The savings in development costs through following this procedure has been great, resulting in an economy of an estimated 16½ million dollars or the equivalent of 15 cents per barrel for the 107,250,000 barrels of new reserve added. This is based on a weighed average recovery of 7500 barrels of oil per acre, principally in the Arbuckle dolomite and the Lansing-Kansas City lime series found at depths averaging 3300 feet. This saving is based on the difference between 55 cents a barrel costs for 10-acre spaced wells and 40 cents a barrel for 20-acre spaced wells, using a per well cost of $23,000 as an average.

An excellent example of the widespread application of 20-acre

TREND OF KANSAS WELLS TOWARD WIDER SPACING

These percentage charts summarize the distribution of Kansas proratable oil wells by the various spacing patterns employed, comparing conditions in September, 1939, with that in July, 1940. In the interim, the percentage of 20-acre spaced wells has doubled and today this pattern comprises more than 20 percent of the total proratable oil wells in the state.



Percentage of Wells Assigned to Each Spacing Pattern

	10 Acres	13 Acres	15 Acres	17 Acres	20 Acres
August 20, 1939	87.737	0.752	0.207	1.411	9.893
June 20, 1940	77.726	0.629	0.274	1.355	20.016
Net Change	−10.011	−0.123	+0.067	−0.056	+10.123

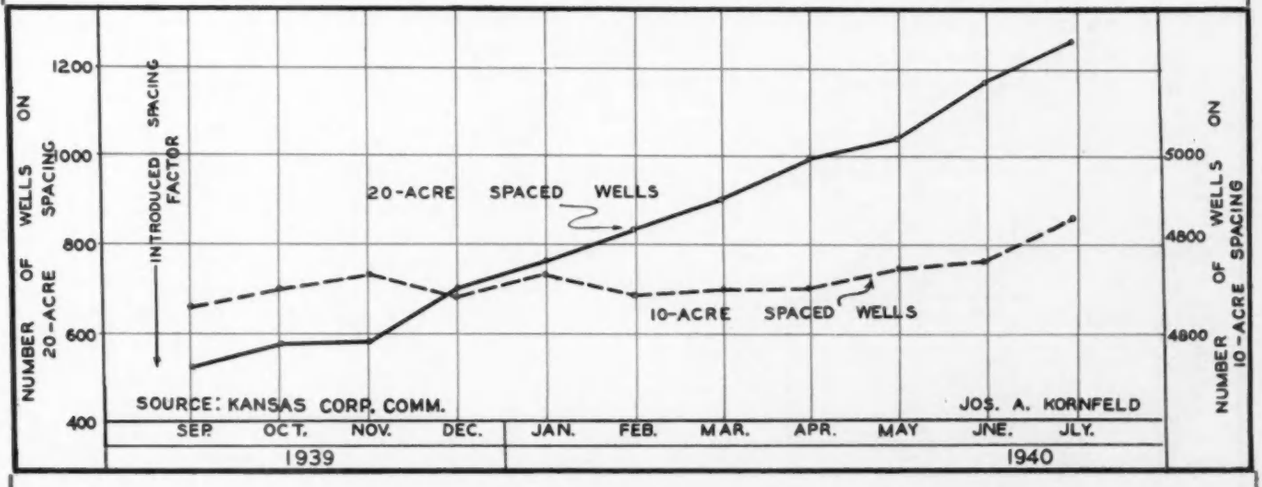
From Adoption of Twenty In Western Kansas

spacing in a field principally developed previously by 10-acre well pattern is the Zenith pool in Stafford County. The heavy drilling obligations evident in the new north and northwest extensions coupled with the wider drainage area of the Viola lime made wider spacing necessary. Consequently, since the fall of 1938, more than fifty 20-acre spaced wells have been drilled and completed at a saving of $1,250,000 in drilling costs to a number of operators including Deep Rock Oil Corporation, Republic Natural Gas Company, Transwestern Oil Company, Skelly Oil Company, and Stanolind Oil & Gas Company.

The popularity of 20-acre spacing in western Kansas today is shown by the fact that 20.016 percent of all proratable wells is listed on the official proration schedule assigned to that well pattern. This represents more than double the percentage recorded as of August 20, 1939, when the figure was 9.892 percent. Simultaneously, the percentage of 10-acre spaced wells has

Distribution of Kansas Prorated Wells by Spacing Patterns

The rate of drilling on 20-acre spacing in Kansas is exceeding the number of wells completed on 10-acre spacing. From January 1, 1940, until July 1, 1940, the number of prorated wells on 10-acre spacing increased but 91, meanwhile the number of prorated wells on 20-acre spacing were enlarged by 487. New wells are being drilled on 20-acre spacing at the rate of from 90 to 126 monthly, and have accounted for 66 percent of the wells completed during the past 11 months.



	NUMBER OF WELLS ON EACH SPACING PATTERN				
	10 Acres	13 Acres	15 Acres	17 Acres	20 Acres
September, 1939	4665	40	11	75	526
October, 1939	4701	58	11	60	587
November, 1939	4726	64	10	62	583
December, 1939	4676	59	11	68	697
January, 1940	4728	62	14	71	754
February, 1940	4667	57	14	71	828
March, 1940	4685	50	15	74	888
April, 1940	4675	48	15	82	982
May, 1940	4725	47	15	86	1025
June, 1940	4742	40	17	93	1151
July, 1940	4819	39	17	84	1241

dropped 10 percent during the same period, from 87.737 percent of all wells to 77.725 percent. The number and percentage of 13.3-acre and 17-acre well patterns in western Kansas has remained practically constant, while that relating to 15-acre spacing has shown a small increase. The major changes during the 11-month period commencing with the first official commission order incorporating the acreage factor in well allowables is clearly illustrated in Table 1.

Kansas Well Spacing Factors

A number of economic and physical factors has made wider well spacing particularly desirable in western Kansas, including the following:

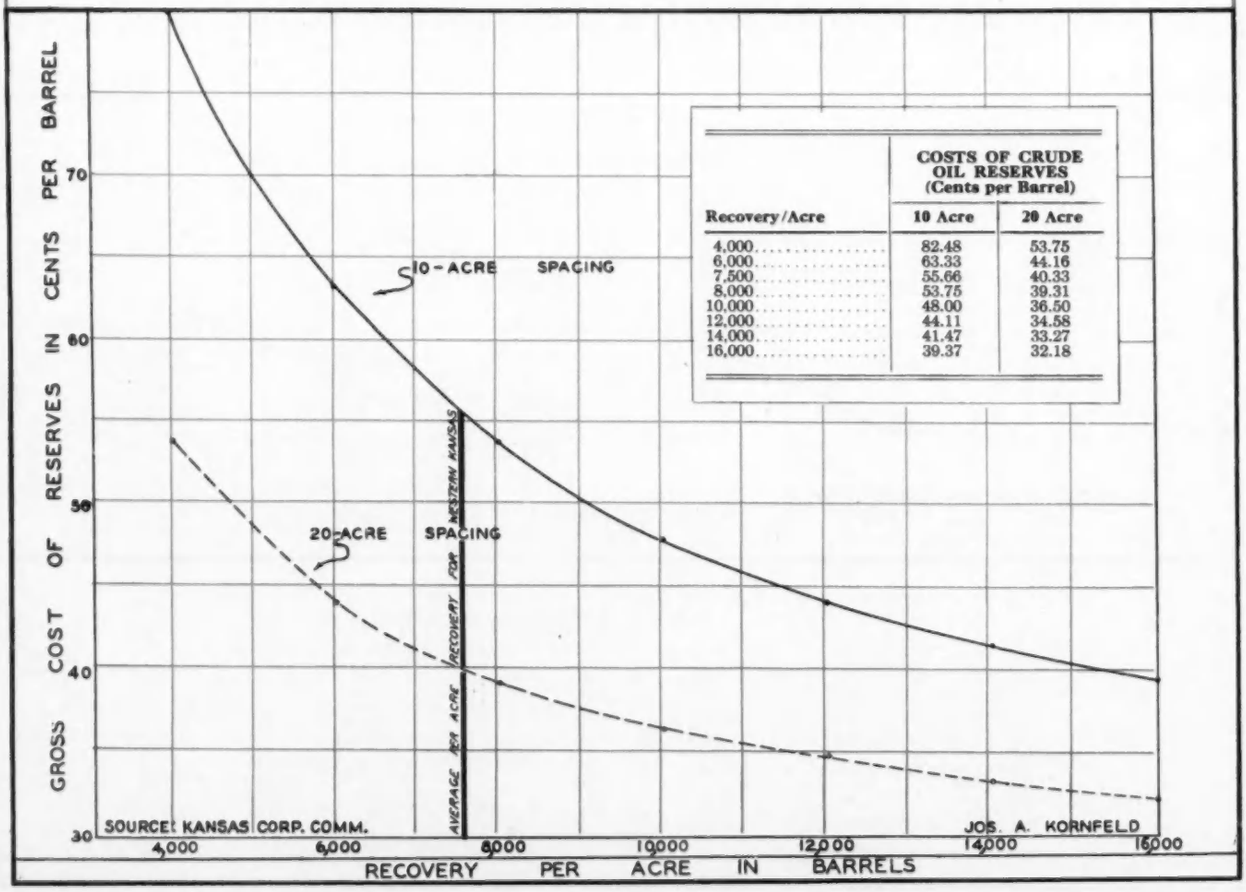
1. Shrinkage of market due to loss of out-of-state demand, which coupled with high completion rate, made per well allowable decline rapidly.
2. Low per well allowable, at present only 19 barrels per well, compared with the 15-barrel minimum for 10-acre spacing.
3. High cost of production, due largely to necessity of handling large volumes of salt water.
4. Present ability to drain large areas on account of universal use of acid in large doses; some applications are 30,000 gallons in 3-stage treatment.
5. Forced development of leases through short-term expirations.
6. Forced development of leases through protection from drainage.
7. Forced development to maintain drilling density with offset leases.
8. Low withdrawal rate from principally lime reservoirs.
9. Hydrostatic head as propelling force with little or no gas drive.

New 40-Acre Program

All these factors point towards the application of a spacing pattern of not less than 20 acres and not more than 40 acres. The 40-acre spacing program which saw practical application at Ellinwood since its discovery in July, 1932; and again at Shallow Water in Scott County, since March, 1935, was applied successfully at Whelan pool in Barber County during July, 1940. Companies who have signed the agreement for a uniform 40-acre plan are Olson Oil Company, Lario Oil & Gas Company, James Davis, Indian Territory Illuminating Oil Company, and Wilton J.

Spacing Influence on Kansas Development Costs

The economic importance of the spacing factor in development costs of Western Kansas is great. The graph and table below compares the gross cost of reserves in cents per barrel on 10-acre and 20-acre spacing when plotted against various recoveries per acre. Data are based on an average drilling cost of $23,000 per well, with a flat 25 cents per barrel charge for lifting costs, and using a 160-acre tract as the basis. Experience has shown that the weighted average per acre recovery for Western Kansas is 7500 barrels from the Lansing-Kansas City lime series and the Arbuckle dolomite; thus 20-acre spacing will save 15 cents per barrel of reserve developed when compared with 10-acre spacing.



Recovery/Acre	COSTS OF CRUDE OIL RESERVES (Cents per Barrel) 10 Acre	20 Acre
4,000	82.48	53.75
6,000	63.33	44.16
7,500	55.66	40.33
8,000	53.75	39.31
10,000	48.00	36.50
12,000	44.11	34.58
14,000	41.47	33.27
16,000	39.37	32.18

Coppinger. Production is encountered in the Mississipian chat at an average depth of 4300 feet; no water is encountered in this formation in appreciable quantities. Accompanying gas volumes range from 500,000 to 1,000,000 cubic feet daily. Initial potentials range from 600 to 3900 barrels daily. Already 13 wells have ben completed in the chat horizon, and through a slow rate of withdrawal a small decline of only 15 pounds in the initial rock pressure has ben registered in only six years, the discovery having been completed in November, 1934.

Many hold to the opinion that in the case of truncated, low-relief reservoirs of lime and dolomite benches typical of western Kansas, the predominating factor in oil recovery is the rate of edge-water encroachment dependent on the following factors:

1. Optimum well-spacing; not less than 20 acres, not greater than 40 acres.
2. Rate of drilling development; with reference to original oil-water contact.
3. Average well completion depth with reference to the original oil-water contact.
4. Rate of withdrawals from reservoir.
5. Presence or absence of pressure maintenance or repressuring.

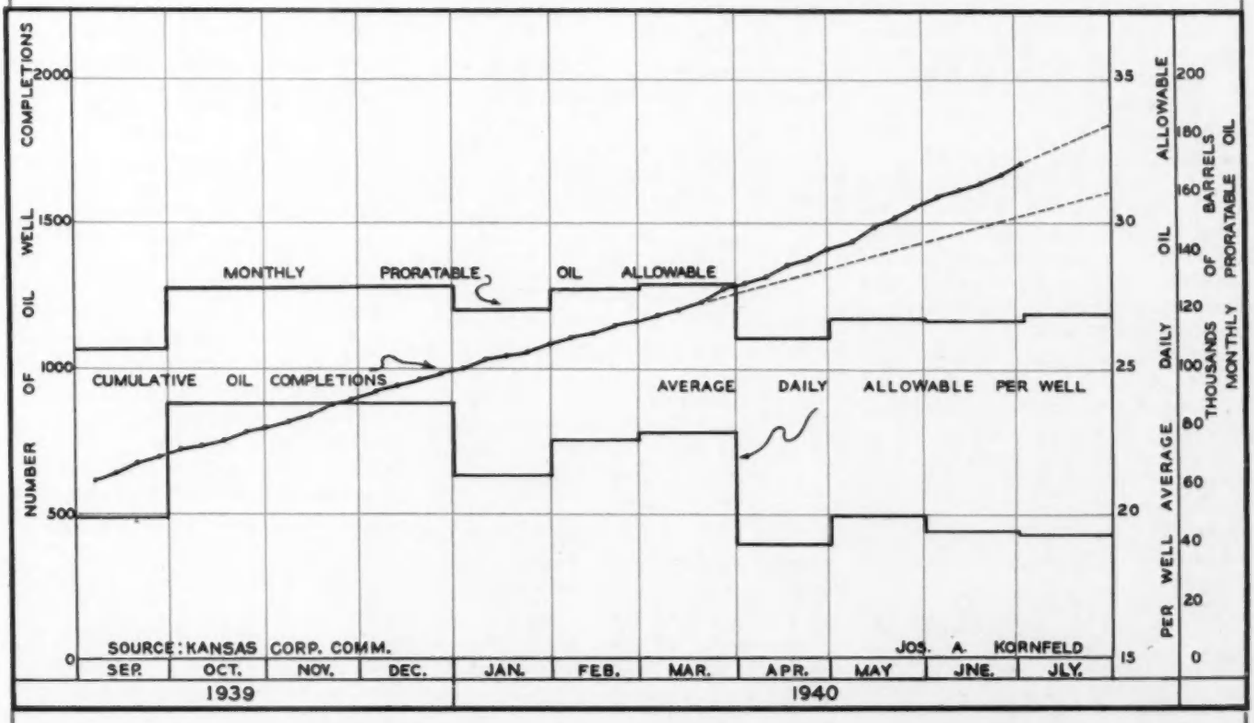
Engineering Objectives

From an engineering standpoint, well spacing conditions in western Kansas are related to the following objectives:

1. Secure the most efficient de-

Trend of Kansas Average Per Well Allowable, Rate of Completions and Related Factors

Graph indicating the effect of the rate of oil well completions in Kansas on the average daily allowable per well, with consideration given to the variation in the monthly proratable allowance. Note the sharp rise in the rate of oil completions, which are accumulated from January 1, 1939, for statistical purposes, reflecting partly spring drilling conditions and minimum allowable incentive. However, had it not been for two-thirds of all wells completed during the past 11 months being on 20-acre spacing, the number of wells that would be sharing in the total proratable quantity would be much greater. The per well allowable has been much steadier in recent months, partly due to a larger daily amount of proratable oil.



MONTH	Total Daily Allocation	Daily Proratable Oil	No. Wells Prorated (Cumulative)	Daily Per Well Allowable
October, 1939	170,600*	127,347	5366	23.734
November, 1939	170,600*	127,347	5366	23.734
December, 1939	170,600*	127,347	5366	23.734
January, 1940	160,600	119,100	5602	21.260
February, 1940	165,600	126,000	5611	22.456
March, 1940	170,000	128,000	5687	22.685
April, 1940	151,000	109,000	5775	18.875
May, 1940	158,100	116,000	5855	19.812
June, 1940	178,000	115,743	6006	19.271
July, 1940	178,400	117,823	6143	19.180

* 90-day proration order.

velopment with the least number of wells, i.e., at the lowest cost per barrel of reserves (under small per-well allowables, and a declining allowable trend, there is now no longer an incentive to "build up a large potential" on a lease in the hopes of obtaining a permanently-high allowable, for the decline often cancels the allowable gain originally sought in the development program).

2. Achieve a full, uniform development of the entire property through the most efficient well-spacing pattern for that type reservoir. (Some 10-acre development protects only the lease boundaries, "matching offsets" leaving the inside acreage improperly developed or neglected with the result a chaotic program.

3. Delay the rate of water encroachment, through the rate of property development and the rate of withdrawals.

Recovery and Pressure Gradient

Recovery bears a direct relationship to the locale and size of the bottom-hole pressure gradient. This condition is well exemplified by the chaotic pool development in the vicinity of townsites overlying reservoirs developed under the old town-lot, open flow production methods. The concentration of many wells within a few acres, far below the optimum spacing creates a pressure differential towards the densely-drilled area that disturbs and creates serious loss to those leases lying adjacent to and outside of the townsite. This condition may be best expressed in the manner that non-uniform well spacing, and spasmodic, irregular rate of development and concentrated withdrawals creates irregular recovery conditions because of:

1. Inefficient use of reservoir gas energy.

2. Inefficient use of edge-water drive due to irregular encroachment.

3. Inefficient drainage through decrease in effective drainage radius because of a severe pressure decline in certain parts of the reservoir.

In recent months, this condition was spectacularly proven in the chaotic development of the Centralia and Northwest Centralia townlot area in Marion and Clinton counties, Illinois.

Recovery and Well-Spacing

Muskat[1] has shown that "from a strictly physical point of view there is no basis for believing that the absolute ultimate recovery of oil that can be produced from a uniform and non-lenticular sand through the agency of the dissolved gases will materially depend upon the number of wells used to drain the reservoir. There is however, a definite variation of the economic ultimate recoveries that can be derived from a given reservoir with the number of wells, if we consider the economic ultimate recovery to refer to that which can be obtained with the individual well production rates exceeding a pre-assigned minimum."

In this connection, it is proper to quote the statement of Uren[2] that "where the pressure of edge-water furnishes the expulsive energy (as in western Kansas) a well may develop drainage over a much greater distance than where expanding gas dissolved in or occluded within the oil is the controlling force and the possible recovery will vary accordingly."

Kansas Well-Spacing Legislation

The history of well-spacing legislation in Kansas goes back to the development of the Oxford townsite pool in eastern Sumner County, in which a federal court upheld the decision of Marrs vs. City of Oxford in which it held valid the forced pooling of all the lots within a city block. The United States Supreme Court denied a writ of certiorari in the Marrs case, thus giving approval to this type of pooling regulation as applied to city property.

First establishment of well spacing by pools was made during May of 1938 by the action of the Kansas Corporation Commission in setting forth a 10-acre spacing rule for the Zenith field on granting the application of Stanolind, Pure, Continental, E. H. Moore, Tide Water Associated Oil Company, et al. Following this precedent, 10-acre spacing was established for the Geneseo pool of Rice County, when the commission, on July 14, 1938, granted the application of Continental Oil Company for 10-acre spacing. In its application, Continental charged unwillingness of individuals interested in a 1.15-acre tract in failing to cooperate in voluntary well spacing as practiced by the applicant. Later the acreage factor was introduced in the computation of the rate of decline in well potentials by the composite well decline curve in lieu of physical tests.

Although wider spacing was inevitable, due to the rapidly declining per well allowable in the face of loss of outside Kansas markets and a high completion rate, it was given major impetus by action of the Conservation Division of the Kansas Corporation Commission in September of 1939. At that time, the commission in its general rules and regulations for the conservation of crude oil and natural gas prescribed adjustments for wider spacing, assigning a daily minimum per well allowable of a 20-acre unit at not less than 30 barrels, and that of a 15-acre unit at not less than 22½ barrels daily, for allocation between wells in a given pool, and that not more than 20 acres would be considered attributable to one well in fixing the minimum allowable. The same order, in applying the acreage factor in spreading the state allowable among the various pools of the state, considered the 10-acre production unit as a basic denominator; thus the "productivity" is revised upward or downward in direct proportion that the area of the drilling unit bears to 10 acres, so that a 15-acre unit was considered as equivalent to 1½ wells, while a 20-acre unit was considered equivalent to 2 wells for the purpose of allocating oil between pools. Wells assignable to 20-acre units were recorded as two wells for making the proper adjustment.

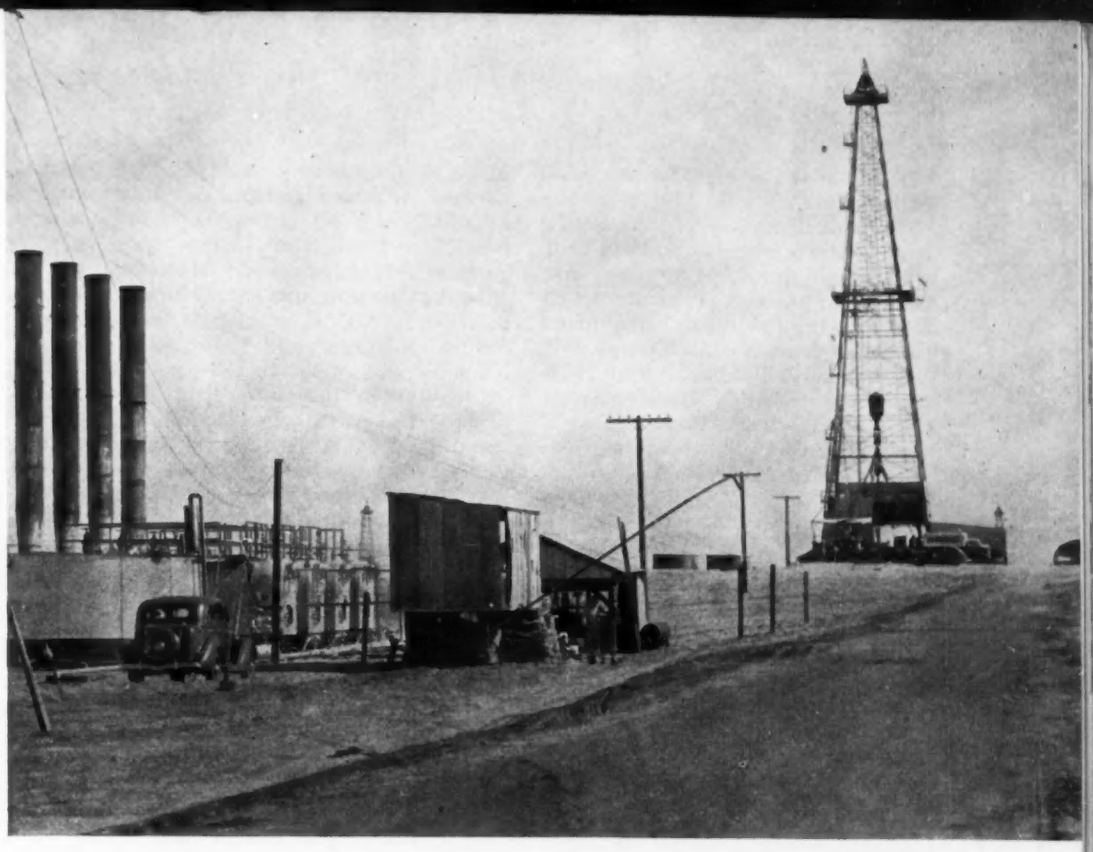
This order proved popular with the Kansas operators and completions of oil wells in western Kansas on 20-acre units started a marked upward swing by November of 1939, less than two months after the order went into effect. In effect, it virtually cut the payout time nearly in half.

Legal objection arose the month after the order was issued when Harold Medill, chief counsel, and Jack Jones, both with the commission, in an oral opinion, held that the commission could not legally create two wells out of one for the spreading of allowables.

Accordingly, a new order was issued on December 1, providing for the change in factor of only 1½ to 1 for 20-acre units for allowable spread between pools.

[1] Muskat, Morris, Principles of Well Spacing, Petrol. Tech. & Development, Chapter I. Production Engineering (1940) p. 51.

[2] Uren, Lester C. Principles of Oil Field Development. Part III. Theoretical Aspects of Oil Well Spacing, National Petroleum News, January 1, 1930, p. 49.



This heavy-duty drilling outfit in the East Coalinga field has been completing 8000-foot wells in 45 to 60 days, at an average cost of about $95,000.

Smaller Diameter Holes Cut Deep-Drilling Costs

APPLICATION of smaller diameter hole sizes to deep producing areas has been an important development in recent California drilling operations. Completion of several wells of this type in two San Joaquin Valley fields is expected to have an important bearing on drilling practices in areas showing high casing costs. This trend toward smaller holes actually started several years ago, but sharp reductions in diameter were chiefly confined to upper portions of the hole. Completion of deep producing wells with full 4½- and 5½-inch O.D. oil strings is a significant development in a state that has favored large oil strings.

Drilling of small holes has not been accompanied by the expected reduction in drilling time. Material costs have been reduced appreciably, but the drilling time has been longer in slim holes than in the larger holes. This unexpected time increase has been caused largely by mechanical factors, but it is believed that drilling time in slim holes gradually will approach that in the larger holes.

Shell Oil Company has pioneered slim-hole drilling in the Canal and Ten Section fields, Kern County. In recent completions this company has successfully finished wells below 8000 feet, with 8⅝- or 9⅝-inch surface strings at about 1000 feet, and 8⅝-, 7⅝- and 6½-inch holes to bottom. Holes of the smaller diameters are used below the 8⅝-inch surface strings. A full string of 4½-inch O.D., 12.6-pound casing is run and cemented over the oil sand at about 8000 feet. The well is finished with a 3½-inch liner. The old program in these fields called for cementing a 11¾-inch surface string at 1000 feet, drilling a 10-5/9-inch hole to bottom, a full 7-inch O.D. oil string to about 8000 feet, and final completion with 5½-inch liner.

Because of the small diameter of the oil strings used in these slim holes, all footage is made before running the casing. The casing is cemented well off bottom, however, above the oil zone. The hole is bridged immediately below the shoe of the 4½-inch casing to prevent the cement from filling the portion of the hole through the oil sand. Drilling out and cleaning out through the 4½-inch casing is done with a bit on the end of 2⅜-inch tubing, this tubing string being that used later in producing the well.

Drilling to completion depth before running the small oil string has removed one of the original objections to slim-hole drilling. The small bits and drill pipe permitted inside the 4½-inch O.D. would make hazardous the full drilling of the producing formation below the final shutoff. By drilling the full completion depth before running the small oil string, size of the hole opened through the oil sand also is ample.

Full drilling or testing of the producing zone before running the oil string has been especially effective in edge wells, where it is necessary to determine sand thick-

ness in advance of a large casing expenditure.

The material saving resulting from slim-hole operations has been substantial, but the company has been disappointed in failure to effect a saving in drilling time. More time has been required to drill a 7⅝-inch slim hole than the 10¾-inch hole formerly drilled below the 11¾-inch surface string.

Modified Hole Reduction

Union Oil Company has been experimenting with slim holes in the Rio Bravo field, a 11,500-foot producing area in Kern County. Production is developed so deep in this field that only a modified form of reduction has been carried out, however. In one well recently completed, a 11¾-inch surface strong was cemented at 1500 feet, in contrast to the 13⅜-inch surface casing ordinarily run. A 10⅝-inch hole was drilled to 8500 feet, and an 8½-inch hole continued to 11,200 feet, where a full string of 5½-inch O. D. casing was cemented. Drilling was continued below the 5½-inch casing to 11,500 feet, the completion depth, with the largest hole permitted through the casing. A 4-inch flush liner was then run to bottom.

This small-hole program contrasts sharply with the first wells drilled in the field, the old program having called for drilling a 12½-, 11¾- or 10¾-inch hole from the 13⅜-inch casing shoe to 11,200 feet, running of full 7-inch oil string to that level, drilling 6-inch hole through the oil sand to 11,500 feet, and final completion with 5-inch liner. Slight variations in this drilling program were practiced.

This company also failed to make as good time in its first slim hole at Rio Bravo as had been made in its most quickly drilled conventional hole, but the material saving was considerable. The elapsed drilling time for the smaller hole was 53 days, as compared with 46 days in another well, and another company's record of 38 days. Faster time probably will be made in slim holes at Rio Bravo, but even if the drilling time is shortened only enough to equal that of the larger holes, the material saving will be large. The elapsed time for the first slim hole was considered satisfactory.

Union Oil Company recently inaugurated "step cut" drilling at Rio Bravo, a practice that gradually reduces the size of the hole between the shoe of the 13⅜-inch surface string and cementing point of the 7-inch oil string at 11,200 feet. A typical well of this type carries a 12½-inch hole from the 13⅜-inch casing shoe at 1500 feet to 8500 feet, 11¾-inch hole from 8500 to 9500 feet, and 11-inch hole from 9500 to 11,200 feet. In a hole of this type, the danger of disturbing the walls when pulling or running the bit is reduced, particularly when coming out of the hole from below 9500 feet. The 11-inch bit almost fills the 11-inch portion of the hole below 9500 feet, but between 9500 and 8500 feet, the bit has a greater clearance in and out. Between 8500 and 1500 feet, the bit has a still greater clearance in the 12½-inch hole and wall disturbance is greatly reduced. Size of the hole is simply graduated downward in three steps.

Open Hole

In the new deep fields of the San Joaquin Valley great spans of open hole are carried with little trouble. The amount of open hole carried successfully has favorably affected drilling costs in several fields. A new open-hole record was established recently at Wasco when 11,800 feet of uncased formations was penetrated. At Rio Bravo almost 10,000 feet of open hole is carried, almost as much in the deep zone at Greeley, and from 5000 to 7000 feet in other San Joaquin Valley fields.

Much less casing is being run per foot of hole drilled than was run six years ago. Use of four strings of casing in 8000-foot wells was common practice prior to 1935, but at Rio Bravo, East Coalinga, Canal, Ten Section, Cole's Levee and other deep fields only two primary strings are used. Even at Kettleman Hills and Wasco, two strings per well will do the work. A third or intermediate string was used in the first two Wasco wells, but the trend is toward two primary shut-offs. Average formations stand up well with straight drilling and good mud control.

In the East Coalinga field, a representative drilling program requires 11¾- or 13⅜-inch casing at 600 feet, 7-inch at around 8000 feet, and 5-inch all-perforated liner. At Cole's Levee, the 13⅜-inch casing is cemented at 1400 feet, 8⅝-inch run to top of the oil sand at 8200 to 9400 feet, and a 6⅝-inch liner run through the producing formation. Another program in this field calls for 11¾-inch casing at 1400 feet, a 7-inch string at 9000 to 9400 feet, and 5½-inch liner. At Wasco, it probably will be possible to complete wells at 13,200 feet with only a surface string and a 6⅝- or 7-inch string at about 13,100 feet, as against the former three-string program. In the Greeley and Rio Bravo fields, drilling to more than 11,000 feet is accomplished with a surface string at 1500 feet and 7- or 7⅝-inch over the oil zone. Most of the deep San Joaquin Valley fields carry formations that lie nearly flat and stand up well with open hole.

Drilling Time Reduced

Drilling time is being gradually reduced in the deeper fields. The elapsed drilling time in the East Coalinga field varies from 45 to 60 days and averages about 50 days for an 8000-foot well. At Cole's Levee it is possible to drill to 9000 feet in 25 to 30 days, but actual completion time is nearer 60 days for a 9500-foot producer. At Rio Bravo the drilling record for a 11,500-foot well is 36 days, but 45 to 50 doys is a better average. Shell Oil Company recently completed a well at 8200 feet in the Ten Section field in 27 days. In the Wasco area a well was drilled to 10,000 feet plus in 20 days, to 11,000 feet plus in 30 days, and to 12,000 feet plus in 40 days. Continental Oil Company has sharply reduced the drilling time in this field, having recently drilled to 12,800 feet in 50 days.

Rotating Speeds

Despite occasional efforts to attain higher rotating speeds, most of the companies have not participated in the hysteria of speed that swept California two years ago. The average rotating speed in the upper portion of the hole has gradually increased as straighter holes have been drilled, and speeds above 400 r.p.m. are common with a few operators. Rotating rates above 700 r.p.m. have been reported, but the highest speeds ordinarily used in San Joaquin Valley fields are around 500 r.p.m. in the shallower formations. Speeds from 200 to 300 r.p.m. are much more common. When hard formations are encountered in the lower portion of the hole, rotating speeds are reduced to 100 to 300 r.p.m. Companies using the highest rotating speeds have made the best drilling time in at least two fields, but more conservative operators believe other factors offset a slight loss in drilling time through slower rotating speeds. It has been determined at

Wasco that high rotating speeds are safe where the hole is straight. Holes show a deviation of less than a half of one percent from vertical, from surface to cementing point of the surface string at 1500 feet. Extremely high rotating speeds are practical only where the upper part of the hole has been kept almost vertical.

Use of an oil-base mud while drilling producing formations is a new California practice. Various adaptations of this drilling fluid have been used, but the practice is still in the experimental stage. Producing sands in several fields become contaminated easily, because of high porosity or low pressure. Mineral seal or absorption oil is used as a base for one drilling fluid of this type, but experiments have been carried out with asphalts as a base. Lamp black is used for colloidal material, while 300-mesh limestone is added as a weight material. Mud of this type is very messy to handle and men around the derrick generally dislike using it for this reason. Good results have been reported in a few wells completed with the fluid.

Further refinements in mud control have been factors that made possible new drilling records in several deep fields. Mud weighing from 10 to 11½ pounds per gallon is commonly used in the 10,000-foot fields of the San Joaquin Valley, but 14-pound muds have been used in some of the troublesome formations, particularly at Wasco. Heavy, conditioned muds have been effective in holding semi-heaving shales in place.

Chemicals in Mud

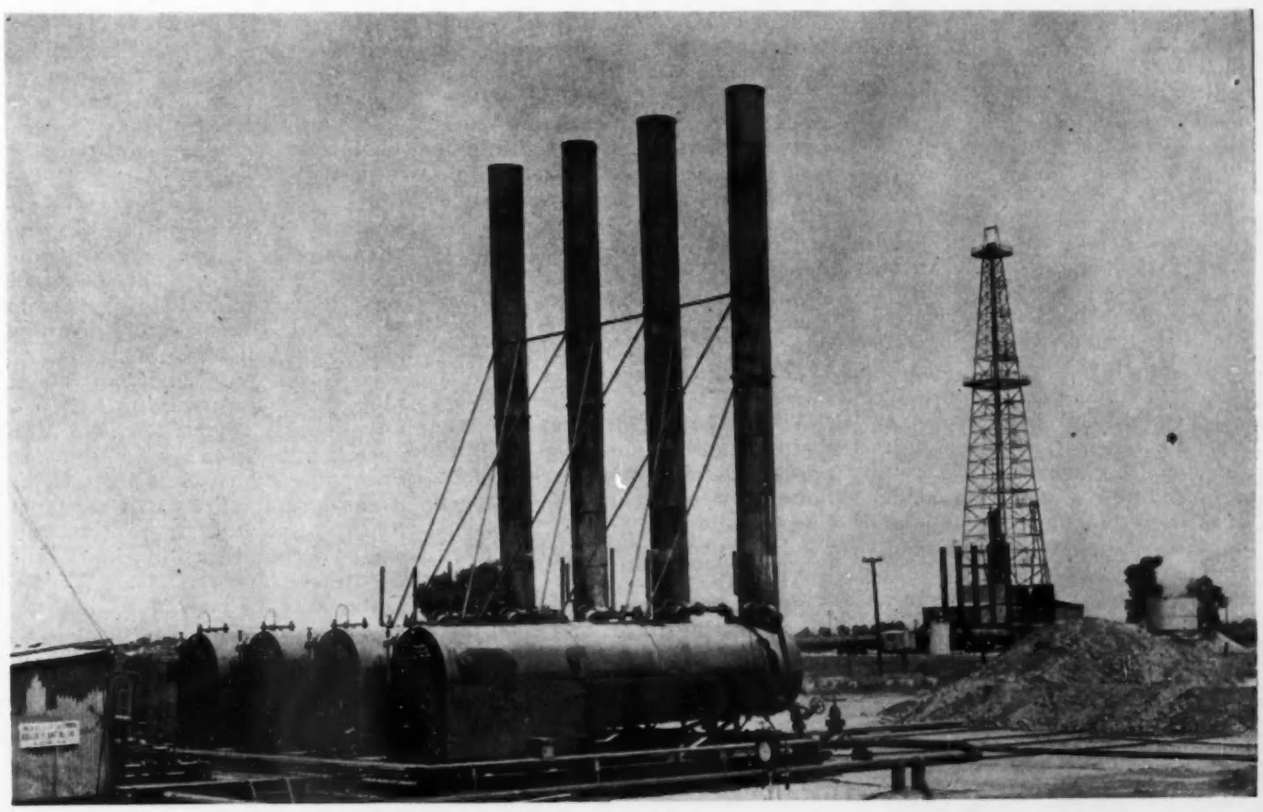
The various mud combinations are chemically treated to meet conditions. The two phosphates commonly used are sodium tetra-phosphate and tetra-sodium pyrophosphate, both used as deflocculating agents. In the more exacting wells both metaphosphates and pyrophosphates have been used, and caustic soda added to control the pH value. Viscosity is ordinarily maintained with tannic acid, an ingredient that imparts a slickness to mud and serves as a fair deflocculating agent. Sodium silicate has been used as a mud conditioner where the hole showed a tendency to cave, and in other instances it has been used with tannic acid.

True mud control involves maintenance of a drilling fluid that functions satisfactorily without serious change from heat, pressure or formation. To maintain such a control, it is necessary to balance colloidal characteristics of the mud with its wall-building qualities and weight in such a manner that cuttings will be removed as they are disengaged, to wall up the hole with a thin filter cake, and to prevent excess loss of water to the formation.

High temperatures encountered in 10,000- to 13,000-foot wells tend to make mud control difficult in formations that might give little trouble near the surface. An elevated temperature increases the viscosity and gel strength of mud, while the viscosity of water at high temperatures may be ¼ to ½ that at low temperatures. This reversal means that filtration of water from the mud at high temperatures will be up to twice that at low temperatures. Deposition of the filter cake on the walls of the hole is proportional to and varies with the rate of filtration of water from the mud. Chemicals are affected by elevated temperatures, and continuous or regular treatment is required below 8000 feet.

Keep Hole Straight

The advantage gained through controlled vertical drilling has been pressed during the past year in all deep fields. Tolerance from vertical has been sharply reduced dur-



A battery of four 350-pound pressure boilers are shown in the foreground, with a battery of five 500-pound pressure boilers in the extreme background. Both batteries are at Rio Bravo, a 11,500-foot producing field.

ing the past two years and a new conception of "straight" holes has been gained by companies employing rapid rotation of drill pipe. The upper portion of holes drilled by Union Oil Company in the Rio Bravo field do not deviate more than one half of one percent from vertical. A deviation of two to three percent near bottom is allowed in the 8000- and 9000-foot fields. Use of long, heavy drill collars has been a successful practice. As much as 360 feet of drill collar has been used to control the weight and place it near bottom. Such a long drill collar theoretically places only the weight of the drill collar on the bit and permits the drill pipe string to function as a power-transmitting medium by remaining in tension. One company has used up to 240 feet of 8⅝-inch drill collar while making 12¼-inch hole, but all whipping action near bottom has not been stopped. Other companies have compromised the trend by using modified lengths of drill collar. It is well recognized, however, that lack of weight immediately above the bit can cause a whipping action when rotating at a rapid rate.

There is still little agreement on the weight that should be carried on the bit under given conditions. One California company drills with 5 to 7 points of weight while rotating from 175 to 225 r.p.m. in favorable formations, and 8 points while rotating at 250 to 275 r.p.m. Superior Oil Company has successfully drilled with 6 to 11 points of weight while rotating at high speeds in soft formations. Another company drills with 6 to 10 points of weight while making hole in favorable formations with a rotating speed of 300 r.p.m., and from 1 to 2 points of weight while straightening hole. Long drill collars, straight holes and rapid rotation permit more weight than formerly was used.

Use of 500-pound steam pressure was introduced 18 months ago, but only the original installation has been made. Such a high steam pressure offers a number of advantages over the 300- and 350-pound pressures, but much of the equipment around a derrick is not suited to 500-pound pressures. Superior Oil Company pioneered use of 500-pound steam, and has applied it successfully to drilling. The original installation included five 130-horsepower boilers of locomotive type. THE OIL WEEKLY of April 22, 1940, pages 18-22, carried a pictorial description of Superior Oil Company's new 500-pound steam pressure drilling outfit.

Two steam pressures are used by Superior Oil Company. The 500-pound steam goes direct to the draw works engine and the mud pumps, while a regulator is used for reducing the pressure to 350 pounds for the standby engine, small mud pump and auxiliary equipment.

Heavier Draw Works

Draw works heavier than any developed previously appeared this year in California, but some of the more conservative companies still favor the standard size of a few years back. With slim-hole drilling making its appearance, it is believed that the trend toward heavier equipment on the derrick floor may be reversed, or at least stopped. High steam pressures have virtually demanded heavier equipment in a few cases, but the companies that have held to a 350-pound steam pressure are not inclined toward a higher pressure.

The draw works recently installed by Superior Oil Company weighs 80,000 pounds, is a fully-enclosed, all-roller bearing, 3-shaft, 3-speed unitized outfit mounted on 28-foot skids.

A smaller, compact draw works is favored by the majority of California operators. Continental Oil Company recently installed a unitized model at San Miguelito, the drive being from a twin vertical steam engine located on a substructure much lower than the derrick floor. Location of the engine on a lower level reduces derrick vibration and gives an upward angle drive.

The 136-foot, 30-foot base steel derrick remains the favorite in California, but the 178-foot derrick is being used some. The 8-foot substructure is widely used, but a new 12-foot substructure was recently introduced.

The 1¼-inch drilling line remains standard in deep drilling operations. Some work has been done toward developing a larger line, possibly a 1½-inch type, but the line currently used gives good service.

In drilling from the shoe of the surface string to around 9000 feet in the San Joaquin Valley, 5-9/16-inch drill pipe is commonly used. The lower portion of the 11,000- to 13,000-foot holes ordinarily is drilled with 4½-inch drill pipe. Hole below the final casing shutoff below 9000 feet usually is made with 3½-inch drill pipe.

The largest slush pumps used in California are the 15½ x 9¼ x 22 pumps inaugurated some time ago by Superior Oil Company. The 20-inch model remains standard with most operators in deep areas.

Separate rotary drives have become standard equipment in several deep fields. The original separate drive was by a small twin vertical steam engine, direct-connected on the derrick floor. A drive now commonly used is by a 12 by 12 twin horizontal steam engine located on the ground level, via chain. Superior Oil Company recently introduced a new rotary drive, using a 12x12 twin horizontal steam engine mounted on the derrick floor. The drive is accomplished through a chain-driven transmission shaft, with the actual rotary table drive being completed by an extended shaft from a beveled gear on the transmission shaft. This 12 by 12 engine also acts as a standby unit, and can be operated either at the driller's or the standby position. A pneumatic power reverse unit is assembled on the rotary drive and standby engine, and pneumatic reverse control is from both positions.

Large drilling outfits powered by internal combustion engines are in use in several deep California fields, and they have established depth records below 10,000 feet. Outfits of this type have attained marked flexibility, the arrangement usually being such that either or both 350-horsepower engines may be used for hoisting or other heavy duties.

Drilling costs have been reduced during the past two years, the reduction in drilling time having been the principal factor in the drop. Well costs in the 8000-foot East Coalinga field range from $75,000 to $125,000 and average about $95,000. Rio Bravo costs have been reduced from about $160,000 to around $100,000, in a few recent completions. Several operators have been attempting to bring drilling costs in deep fields to an average less than $10 per foot, and it is believed that this can be accomplished in some of the 10,000-foot fields. The United States average is around $7.50 per foot for rotary wells of all depths. The average 10,000-foot well in proven fields in Texas or Louisiana may be drilled for $10 per foot, but a higher percentage of hard formations are encountered in California drilling.

Laying Non-Corrosive Salt Water Disposal Line

FROM the haphazard stringing of a few joints of junk pipe to the nearest water course by the maintenance gang, construction of salt water disposal lines has grown with increasing volumes of brine and more rigid regulation of its handling until it now ranks a good third in mileage among the types of line laid by many general pipe line contractors in sections where salt water complicates the production program.

On one recently completed salt water disposal line, involving the laying of 7½ miles of six- and eight-inch pipe, specifications required the following of a predetermined grade, computed to maintain gravity flow of the brine while volume requirements did not justify operation of a pumping unit, as well as provide partial disposal facilities in case of power or pump failure.

The terrain traversed was swampy, with a ground water table close to the surveyed ditch bottom, rendering it impossible to excavate far in advance of the pipe-laying gang. If the open ditch exceeded minimum for a working crew, seepage soon filled the trench to the point where the light-weight pipe—if prevented from filling—would float, introduce variations from the desired profile, and add seriously to the time required for spacing and placing the special collars.

By means of previously noted control points on that side of the right-of-way undisturbed by the ditching machine, it was possible to extend the string against which pipe elevations were checked close behind the trencher; with stringing of pipe, collars and gaskets extending from two or three to perhaps ten joints ahead of the laying gang,

Caving ditch and standing water around pipe testify to difficulties met in low parts of drainage system.

Transitional curve made by means of gasket compressibility and clearance between pipe and collar diameter.

Two men, with jacking bar and special clamps, handle pipe into trench and complete joining in ditch of minimum width.

depending upon the clearance permissible behind the ditcher.

To insure level trench bottom, where necessary bailing was resorted to, and the pipe laid close to grade and with adequate bottom support. Backfilling followed closely the laying to prevent displacement by flotation. The joints were aligned, the collars with special gaskets accurately spaced, and by means of the stringing clamps, each succeeding joint was forced into place. The asbestos-cement pipe was thus "stovepiped" into position, and for construction required the exposure of only the last collar on the pipe already laid to permit the attachment of the fulcrum yoke of the jointer to enable repetition of the stabbing cycle.

By means of the leveled line carried on fixed supports above the ditch and kept taut over the stringing section, each joint was checked for gradient and location before being backfilled, and the permanent profile of the line thus carried ahead without requiring subsequent manipulation.

Slight changes in line direction, up to a maximum swing of six degrees at each collar, were absorbed by the flexibility of the joinings used and the large clearances incorporated between pipe O.D. and I.D. of the collars. Where greater or more abrupt deviation from straight line laying was required than could be provided by the six-degree shift per each 13-foot section, special fittings of the desired angularity were utilized.

These transition ells, of cement-lined cast iron, were of the flanged type. The ells were set into the line between paired adapter fittings with short nipples on one end and standard iron pipe flanges on the other. The nipples, of the same O.D. as the asbestos-cement pipe, permitted the same assembly collar to be used in tying into the line as with straight-run pipe, and thus simplified the actual joining by requiring but one type of connection. This set-up, by placing paired rubber gaskets in each direction adjacent to the cast-iron ell, enabled the desired feature of flexibility to be maintained in the pipe against possible settling strains as the ditch and backfill consolidated.

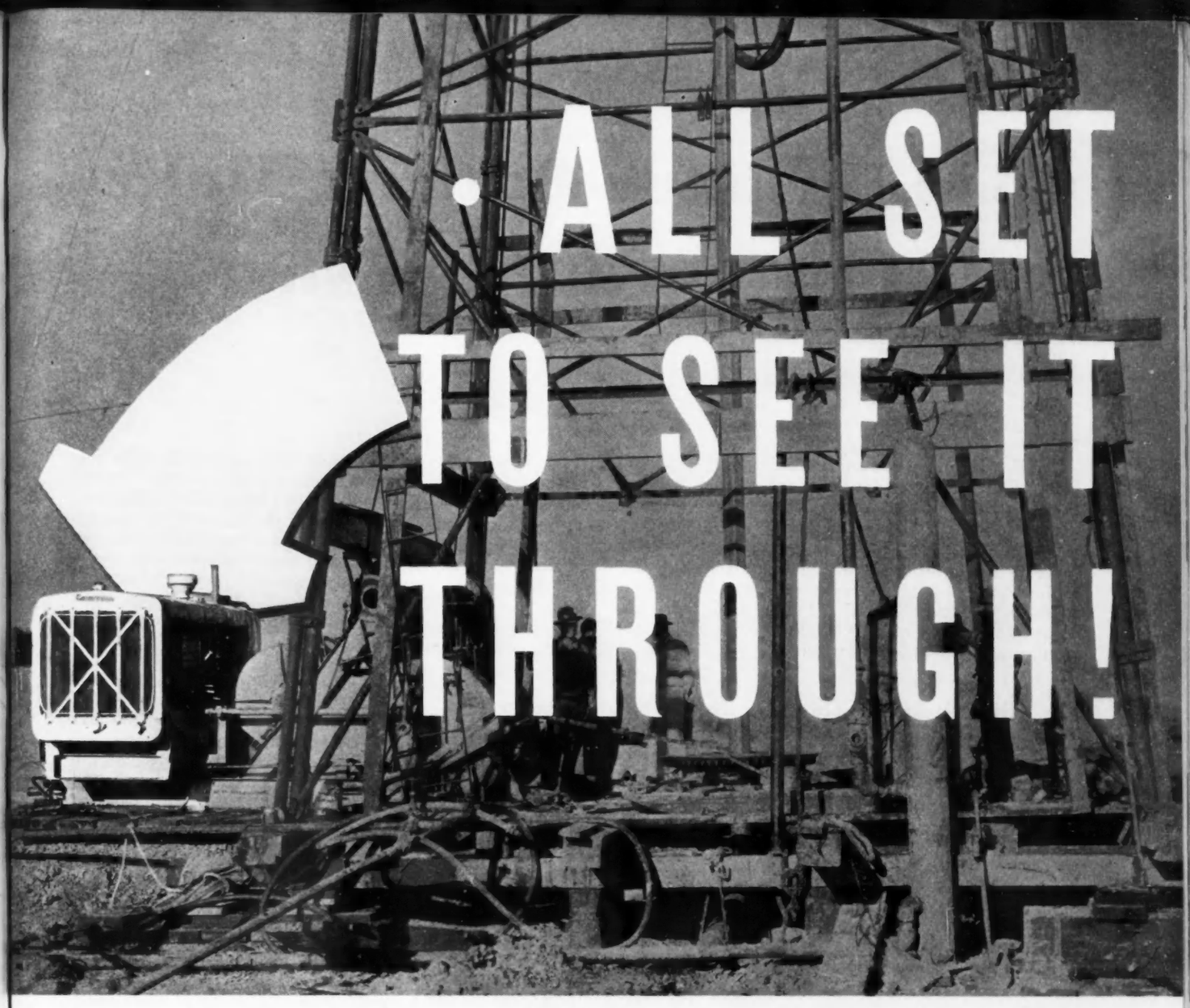
Open trench with pipe, collars and gasket rubbers strung out ahead of pipe-laying crew on fairly dry terrain.

To insure against voids around the pipe, with possible shifts in location or flotation of the line before it could begin carrying its normal loading of brine, much of the pipe was hand-tamped well above the semi-diameter before backfilling by machine was begun.

Although trucked in, over rough ground and without special handling, neither pipe ends nor collars suffered any damage from transportation hazards, and speed of laying was dependent almost entirely on outside conditions of ditch and water. The 13-foot lengths of pipe, light enough to be easily handled by two men, were roped into the deeper sections of the ditch, or simply swung down and into alignment in the shallower sections.

The contractor for this work was Wood Engineering & Construction Company of Arp and Tyler, Texas, through whose courtesy the illustrations are shown.

Special cast-iron ell and paired adapters used in making 90-degree turn in line without sacrificing flexibility.



Big Spring, Texas — *A "Caterpillar" Diesel D13000 Engine on Cardwell Model R skid-type double-drum draw works drilling 3000 feet of well.*

WELLS go down fast when "Caterpillar" Diesel Power takes hold of the job! No drawn-out preliminaries — no waiting for favorable ground conditions to maneuver ponderous power equipment into place — no tedious tinkering — no difficult check-ups or delicate engine adjustments! From the first bite of the drill to the final blow-in, there's a minimum of time-out for engine servicing or parts replacements. . . . For "Caterpillar" Diesel Engines are built to "take it"!

No other engines or types of power in the oil fields have earned a wider reputation for stand-up qualities and long-run drilling speed and operating economy!

"Caterpillar" Diesel Engines, as hundreds of successful drillers have discovered, offer every desirable feature for oil-field work — *ample power* to drive through heavy or suddenly applied loads; *stamina* to keep going on continuous schedule; *versatility* for all kinds of drilling; ready *portability* for quick moving onto the next location; SERVICE FACILITIES that are always close at hand and the most complete of any engine manufacturer.

- *"Caterpillar" Diesel Engines can be equipped for accurate compounding and can be adapted for either Diesel fuel or natural gas. (Use the fuel that's handiest!)*
- Leading manufacturers of oil-field and pipe-line equipment power their products with "Caterpillar" Diesel Engines. Insist on "Caterpillar" Diesel Power when buying such equipment.

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CATERPILLAR

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DIESEL ENGINES AND ELECTRIC SETS • TRACK-TYPE TRACTORS • ROAD MACHINERY

Good Business Outlook Makes Oil Future Promising

THE oil industry's outlook is improving because of developments both outside and within the business.

The nation's industrial and commercial activities are proceeding around the highest levels ever reached, and they promise to increase further in coming months, to unprecedented heights, as the huge armament program gathers momentum.

The general business situation therefore is exceptionally advantageous for oil companies, providing a background against which a bright picture in oil might be painted.

Within the petroleum industry, market conditions have been gradually improving during the past few months, in consequence of stricter crude control in the Mid-Continent, the natural decline of Illinois production, more moderate refinery runs, and better adjustment of the yields of refined products, to provide relatively less gasoline and more heating oil, which will be needed in large quantity next fall and winter.

These developments have somewhat alleviated the seriousness of the surplus of gasoline and thereby have promoted a fairly satisfactory over-all situation, as the excessive gasoline stocks have constituted one of the two chief handicaps of the industry.

No early betterment is in sight for lagging oil exports, the other of the two main difficulties confronting the industry, regardless of the future course of the European war. But about 85 percent of the oil export business has been saved (data for June, 1940, compared with June, 1939); and continued growth of domestic business has more than compensated for the loss of foreign sales. (Total demand for U. S. oil was 3.8 percent greater in June, 1940, than in June, 1939, as a 6.8 percent gain in domestic use materially outweighed the 14.7 percent decrease in total exports.) Furthermore, an acceleration of growth of domestic demand is in prospect, in consequence of the national defense program.

When all these general and intra-industry circumstances are considered, it appears that any change henceforth in the oil outlook should be for the better. If business volumes break away from current trends, they should do so on the upside. If crude postings or product prices move away from present levels, the direction should be upward. If oil company earnings assume different proportions, they should expand.

Some significant improvement of the industry's market situation al-

Oil Demand Up This Year Despite Smaller Exports

Figures indicate barrels, and are from Bureau of Mines

	JUNE			FIRST SIX MONTHS		
	1939	1940	Percent Change	1939	1940	Percent Change
SUMMARY						
Total Demand	116,257,000	120,624,000	+ 3.8	676,876,000	712,938,000	+ 5.3
Daily average	3,875,000	4,021,000	+ 3.8	3,740,000	3,917,000	+ 4.7
Exports:						
Crude petroleum	5,831,000	5,692,000	— 2.4	34,949,000	26,415,000	— 24.4
Refined products	10,834,000	8,516,000*	— 21.4	58,883,000	43,716,000	— 25.8
Total exports	16,665,000	14,208,000	— 14.7	93,832,000	70,131,000	— 25.3
Domestic Demand:						
Total domestic demand	99,592,000	106,416,000	+ 6.8	583,044,000	642,807,000	+ 10.3
Daily average	3,320,000	3,547,000	+ 6.8	3,221,000	3,532,000	+ 9.7
TOTAL DEMAND FOR PRODUCTS						
Motor Fuel:						
Domestic	49,812,000	55,459,000	+ 11.3	258,218,000	278,622,000	+ 7.9
Exports	4,459,000	2,581,000†	— 42.2	23,395,000	13,090,000	— 44.1
Total	54,271,000	58,040,000	+ 6.9	281,613,000	291,712,000	+ 3.6
Aviation Gasoline (included above):						
Domestic	‡	401,000	.....	‡	2,402,000	.....
Exports	465,000	646,000§	+ 38.9	2,606,000	1,892,000	— 27.4
Total	.....	1,047,000	.....	.....	4,294,000	.....
Kerosene:						
Domestic	3,570,000	3,952,000	+ 10.7	30,062,000	35,048,000	+ 16.6
Exports	471,000	332,000	— 29.5	3,725,000	2,291,000	— 38.5
Total	4,041,000	4,284,000	+ 6.0	33,787,000	37,339,000	+ 10.5
Gas Oils & Distillate Fuels:						
Domestic	7,187,000	7,327,000	+ 1.9	71,219,000	86,807,000	+ 21.9
Export	2,839,000	2,129,000	— 25.0	15,918,000	11,326,000	— 28.9
Total	10,026,000	9,456,000	— 5.7	87,137,000	98,133,000	+ 12.6
Residual Fuel Oils:						
Domestic	23,923,000	24,749,000	+ 3.5	155,910,000	167,137,000	+ 7.2
Exports	1,684,000	1,959,000	+ 16.3	9,377,000	7,710,000	— 17.8
Total	25,607,000	26,708,000	+ 4.3	165,287,000	174,847,000	+ 5.8
Lubricants:						
Domestic	1,902,000	2,146,000	+ 12.8	11,053,000	11,806,000	+ 6.8
Exports	1,101,000	1,075,000	— 2.4	5,258,000	6,759,000	+ 28.6
Total	3,003,000	3,221,000	+ 7.3	16,311,000	18,565,000	+ 13.8
Wax (pounds):						
Domestic	19,589,000	21,687,000	+ 10.7	131,022,000	146,855,000	+ 12.1
Exports	24,934,000	13,195,000	— 47.2	124,958,000	129,806,000	+ 3.9
Total	44,523,000	34,882,000	— 21.6	255,980,000	276,661,000	+ 8.1
Coke (short tons):						
Domestic	115,600	101,900	— 11.9	668,200	669,400	+ 0.2
Exports	32,600	30,700	— 5.8	116,900	117,000	+ 0.1
Total	148,200	132,600	— 10.5	785,100	786,400	+ 0.2
Asphalt (short tons):						
Domestic	515,200	570,400	+ 10.7	1,918,300	1,885,400	— 1.7
Exports	3,600	35,200	.....	23,800	157,700	.....
Total	518,800	605,600	.....	1,942,100	2,043,100	.....
Road Oil:						
Domestic	1,210,000	1,275,000	+ 5.4	2,753,000	2,387,000	— 13.3
Miscellaneous:						
Domestic	205,000	207,000	+ 1.0	1,113,000	900,000	— 19.1
Exports	8,000	45,000	+ 462.5	48,000	624,000	+1199.0
Total	213,000	252,000	+ 18.3	1,161,000	1,524,000	+ 31.3

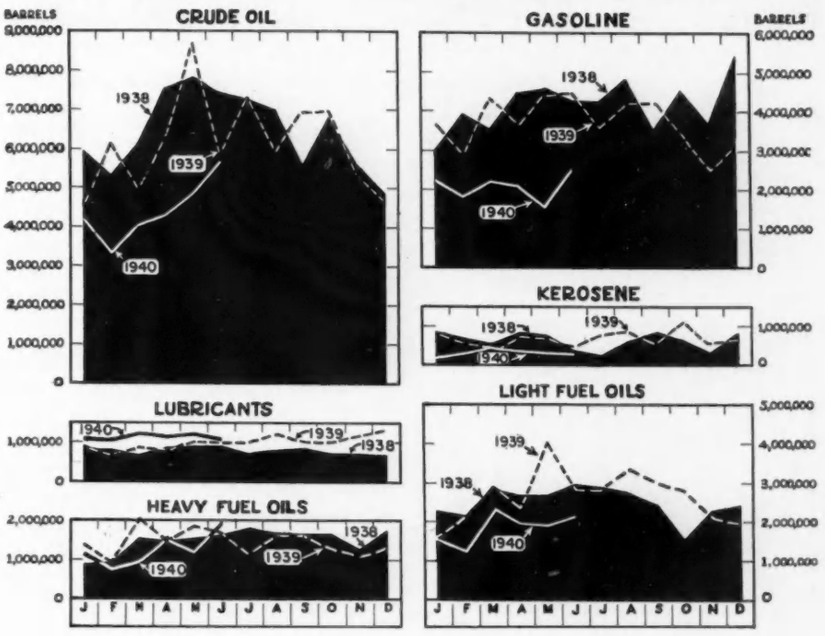
* Exclusive of 15,000 barrels exported from non-contiguous territories but inclusive of 866,000 barrels shipped from U. S. to territories. † Includes benzol, 2,000 barrels in June, 1940. ‡ Not available. § Includes 106,000 barrels of anti-knock compounds.

ready has occurred, in fact, within the past few weeks. Illinois crude has been marked up 10 cents a barrel. Sub-normal gasoline prices have been raised in several marketing districts, and refinery prices have shown resistance to any further downward bidding, following the protracted decline to extremely low levels.

The markets for both light and heavy fuel oils have continued firm, inventories of both being quite moderate in relation to prevailing and prospective demand. The coming fall and winter will make large demands on supplies of heating oil; and the speeding up of industrial production through the preparedness program probably will result in record-breaking consumption of heavy fuel oils, with such large users as the railroads, ships, and factories exceptionally busy. Even at this early stage of the re-arming, appreciable expansion of the demand for heavy fuel oil has occurred in the industrial East and Middle West.

The market for lubricating oil similarly is beginning to feel the influence of the national defense program, having stiffened, particularly in the Pennsylvania district, in the past two weeks. Since the beginning of this year there have been persistent declines in the prices of lubricants and of the select source, Pennsylvania-grade crude. But Western Pennsylvania refiners have encountered definitely better demand for their bright stocks and neutral oils in the past two weeks and some plants report that they have made contracts covering their output for several months ahead. Further expansion of demand logically would lead to a bidding up of prices. Refiners say that higher prices for products are needed to justify the present prices of Pennsylvania-grade crude, despite the three 25-cent reductions since the early part of this year. But substantial betterment of lubricant prices would bring the prospect of a rebound of the postings for Pennsylvania-grade crude.

U. S. Exports of Crude Petroleum and Refined Products



Source of data: Bureau of Mines.

General Business Picture

Present circumstances and prospective developments leave very little doubt that general business activity in the United States will be exceptionally brisk in the latter part of this year and for a considerable time thereafter.

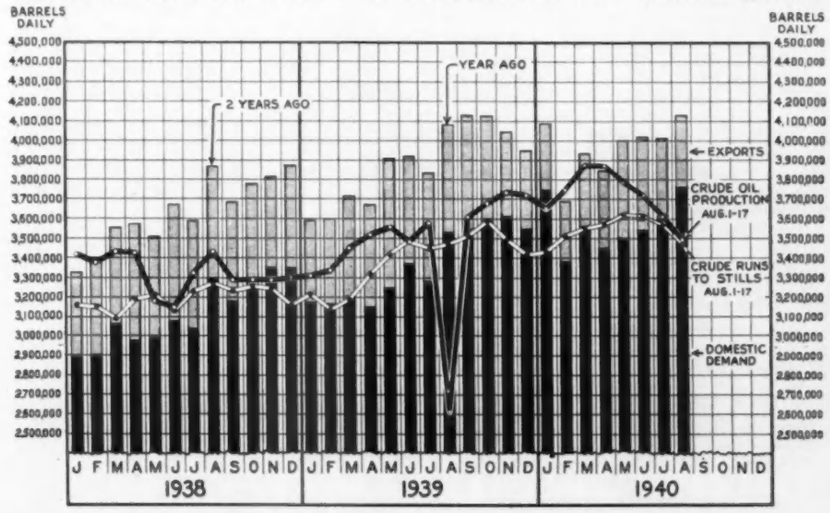
The armament program assures for at least two years the greatest activity in the heavy industries since 1929. The program is expected to involve around twice as much government spending as that which caused the business boom of 1936 and 1937.

The heavy expenditures by the government will provide materially increased employment and larger consumer purchasing power, despite increased taxes to cover part of the costs. And practically all lines likely will feel the effects of the stimulant.

Activity at High Level

The implications are especially boom-like when it is considered that business activity generated by the defense program will be superimposed on an already favorable business situation. At the present juncture, industrial production in the aggregate approximates the record levels of 1929, 1937, and late 1939, as the war-related industries are even busier now than last fall, while numerous other lines, including the oil industry, are turning out products in about the same volumes as a year ago. Industries that are less active than in the boom of late 1939 are definitely in

DEMAND FOR ALL U.S. OILS - CRUDE OIL PRODUCTION - REFINERY RUNS



Source: Bureau of Mines except data for July and August, 1940, which are estimates.

Oil Exports Down 15 Percent in First 10 Months of War

Figures indicate barrels, except as otherwise noted, and are from Bureau of Mines

ITEM	10 MONTHS PERIOD Ended June 30, 1939	10 MONTHS PERIOD Ended June 30, 1940	10 MONTHS PERIOD Percent Change	MONTH OF JUNE 1939	MONTH OF JUNE 1940	MONTH OF JUNE Percent Change
Crude Oil	57,791,000	50,270,000	— 15.0	5,831,000	5,692,000	— 2.4
Products:						
Motor fuel	40,570,000	26,461,000	— 34.8	4,459,000	[6]2,581,000	— 42.2
Aviation gasoline (included above)	[1]2,606,000	[2]2,825,000	+ 8.4	465,000	[7]646,000	+ 38.9
Kerosene	6,353,000	4,994,000	— 21.4	471,000	332,000	— 29.5
Gas Oil and Distillate	24,603,000	21,211,000	— 13.8	2,839,000	2,129,000	— 25.0
Residual fuel oil	15,707,000	13,066,000	— 16.8	1,684,000	1,959,000	+ 16.3
Lubricants	8,200,000	11,256,000	+ 37.3	1,101,000	1,075,000	— 2.4
Wax (pounds)	209,880,000	206,184,000	— 1.8	24,934,000	13,195,000	— 47.2
Coke (short tons)	191,500	214,900	+ 12.2	32,600	30,700	— 5.8
Asphalt (short tons)	41,900	[3]470,200	.....	3,600	35,200	.....
Miscellaneous oils	87,000	687,000	+ 689.0	8,000	45,000	+ 462.5
[4]Total Refined Products	96,479,000	80,198,000	— 16.9	10,834,000	[5]8,516,000	— 21.4
Total Crude & Products	154,270,000	130,468,000	— 15.4	16,665,000	14,208,000	— 14.7

[1] September, October, November, 1938, not included. [2] September, 1939, not included. [3] Beginning January, 1940, includes both manufactured and unmanufactured asphalt; only unmanufactured asphalt being previously shown. [4] Not the sum of the above figures, some of which do not indicate barrels. [5] Exclusive of 15,000 barrels exported from non-contiguous territories but inclusive of 866,000 barrels shipped from U. S. to territories. [6] Includes benzol, 2,000 barrels in June, 1940. [7] Includes 106,000 barrels of anti-knock compounds.

the minority, and they have prospects for improved business in the months ahead.

So far this year, the national income has been about 5 percent greater than that gleaned up to this time last year. Earnings of manufacturing companies for 1940 are expected to be greater than for 1937 and approximately as large as for 1929.

Especially significant for the oil industry is the fact that the automobile manufacturing companies anticipate exceptionally good sales of their 1941 models, which are now going into production. More new cars on the roads will mean increased consumption of gasoline and lubricants.

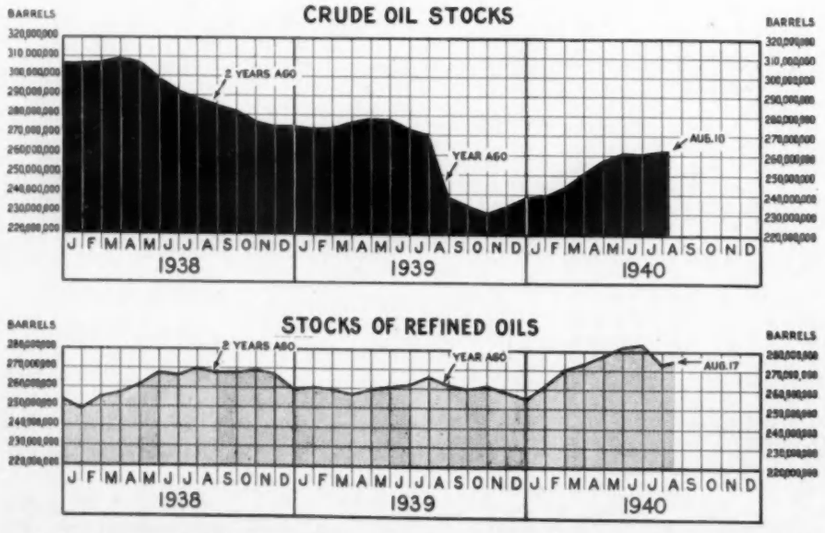
The principal threat to the general business situation is the possibility of British defeat in the European war and a temporary letdown that might result from stoppage of exports to the United Kingdom and from anxiety over adjusting this country's economy to a new order in Europe and the world. However, a government agency has expressed the view that sudden cessation of the war would be "a relatively minor matter" in the business situation. For exports to the United Kingdom are not responsible for more than 2 percent of American industrial output; and a substantial part of the business from Britain involves steel, airplanes, and other military supplies, orders for which would be taken over for the United States defense program in the event of the elimination of the British as customers.

Oil Industry Situation

Despite the two most important handicaps, surplus gasoline and restricted exports, the oil industry occupies a generally desirable position. Total demand for petroleum products continues above last year's curve and therefore highest in the history of the industry, as gains in domestic sales have outweighed losses in export business.

Presented herewith is a table showing how demand, domestic and export, has been in June and the first 6 months of both 1939 and 1940.

Although gains over 1939 were not as large for June as for the first 6 months in the aggregate, the flattening out for the month was not great. Total demand for United States oils was 3.8 percent larger in June, 1940, than in June, 1939, with combined domestic consumption of all products up 6.8 percent,


CRUDE OIL STOCKS
BARRELS
2 YEARS AGO
YEAR AGO
AUG. 10
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1938
1939
1940
STOCKS OF REFINED OILS
2 YEARS AGO
YEAR AGO
AUG. 17

Source: Bureau of Mines except data on refined oils for July and August, 1940, which are estimates.

Changes from Year Ago in Stocks of Crude and Refined Oils in the United States

(Figures indicate barrels)

LATEST WEEKLY DATA

(Sources: Crude stocks, Bureau of Mines; all other figures American Petroleum Institute)

STOCKS OF:	August 17 1939	August 17 1940	Percent Change
Gasoline	74,822,000	86,441,000	+15.5
Gas Oil & Distillate	36,594,000	42,869,000	+17.2
Residual Fuel Oil	115,580,000	107,935,000	— 6.6
Crude Oil	[1]267,536,000	[2]263,607,000	— 1.5

LATEST MONTHLY DATA

(Source: Bureau of Mines.)

ITEM	STOCKS AT END OF JUNE 1939	STOCKS AT END OF JUNE 1940	Percent Change
SUMMARY—			
Crude Petroleum:			
Refinable in U. S.	273,314,000	261,971,000	— 4.2
Heavy in California	14,207,000	13,334,000	— 6.1
Natural Gasoline	6,749,000	7,000,000	+ 3.7
Refined Products	273,590,000	283,905,000	+ 3.8
Total, all oils	567,860,000	566,210,000	— 0.3
Day's supply:			
June Basis	147	141	— 4.1
6 Months Basis	152	145	— 4.6
PRODUCTS—			
Gasoline:			
Finished	74,395,000	86,276,000	+16.0
Unfinished	5,893,000	7,293,000	+23.7
Total	80,288,000	93,569,000	+16.5
Aviation Gasoline (included above)	[3]	3,904,000	.....
Kerosene	7,949,000	6,810,000	—14.4
[4]Gas Oil & Distillate Fuels	25,659,000	26,412,000	+ 2.9
[4]Residual Fuel Oils	93,322,000	85,448,000	— 8.5
Lubricants	7,427,000	8,161,000	+ 9.9
Wax (pounds)	111,504,000	110,346,000	— 1.1
Coke (short tons)	710,000	697,000	— 1.8
Asphalt (short tons)	642,000	681,000	+ 6.1
Road Oil	1,192,000	1,257,000	+ 5.5
Miscellaneous	280,000	411,000	+46.8
Other Unfinished Oils	38,692,000	41,340,000	+ 6.9

[1] Stocks, August 12, 1939.
[2] Stocks, August 10, 1940.
[3] Not available.
[4] At refineries only.

New International
POWER UNITS
for the
Oil Industry

THESE NEW INTERNATIONAL POWER UNITS are 4-cylinder engines, readily adapted to a wide variety of jobs in the oil industry. They bring *new efficiency* and *new economy* in their power range. Their *quality construction* pays out on the job in terms of low operating and maintenance cost, long life, and stamina to stand up under 24-hour-a-day operation. Features that prove of great value for the industry include valve-in-head design, replaceable cylinders, full-floating piston pins, efficient combustion control, pressure lubrication, Tocco-hardened crankshafts, precision-type main bearings, and efficient cooling.

Ask the nearby International dealer or Company branch for complete information on the International Power Unit line, which also includes Four New Diesel Power Units. All carburetor-type engines in the line operate on gasoline, gas, distillate, and kerosene.

Above:
U-2—22 h.p. at 1,800 r.p.m.

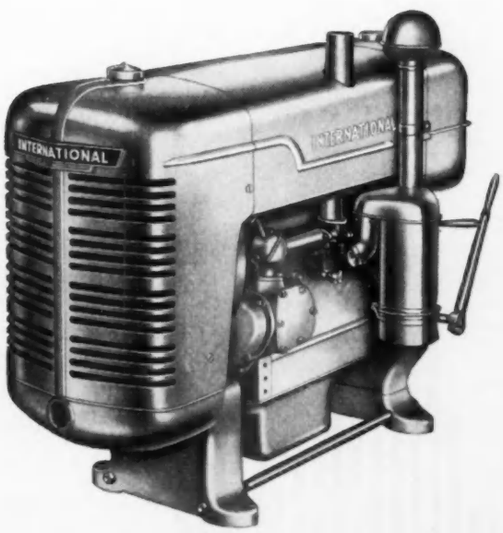
Below:
U-6—41 h.p. at 1,500 r.p.m.

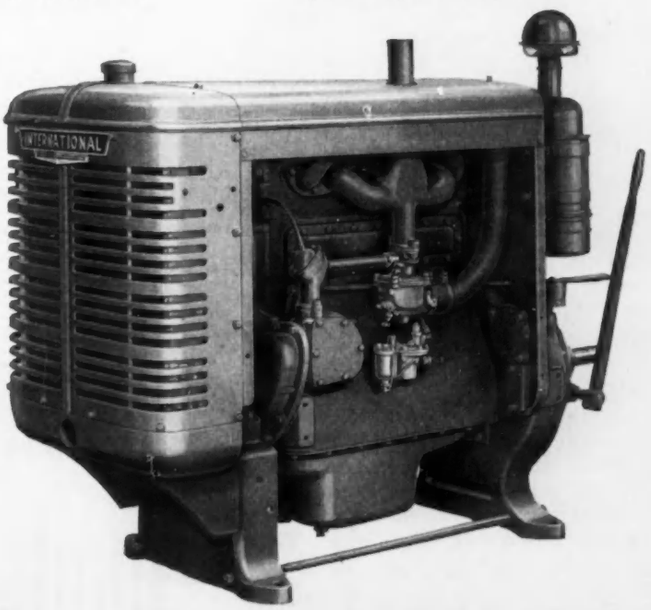
Lower Left:
U-4—31½ h.p. at 1,800 r.p.m.

Operating on Gasoline

INTERNATIONAL HARVESTER COMPANY

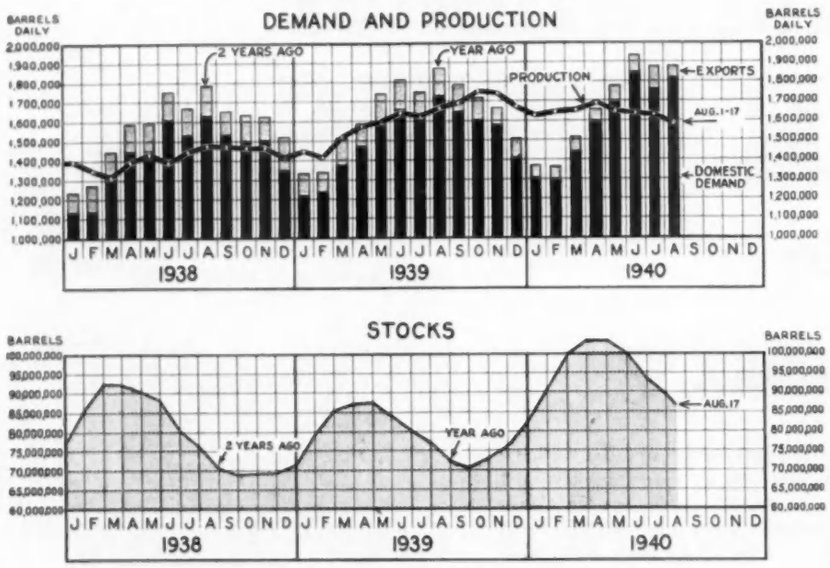
180 North Michigan Avenue **Chicago, Illinois**





INTERNATIONAL Industrial Power

GASOLINE SITUATION


DEMAND AND PRODUCTION
BARRELS DAILY
2 YEARS AGO
YEAR AGO
PRODUCTION
EXPORTS
AUG. 1-17
DOMESTIC DEMAND
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1938
1939
1940
STOCKS
BARRELS
2 YEARS AGO
YEAR AGO
AUG. 17
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1938
1939
1940

Source: Bureau of Mines except data for July and August, 1940, which are estimates.

exports of crude down 2.4 percent, and exports of all refined products off 21.4 percent—a decrease of 14.7 percent for all exports.

Practically all refined products continue in greater domestic demand than they were last year, and the larger home consumption has caused gains in over-all demand for most of the major products, including gasoline, kerosene, heavy fuel oil, and lubricants. In June, heavy fuel oil was the only major product exported in greater quantity than a year previously, although lubricant shipments were nearly as great.

For the first 6 months, total demand was 4.7 percent greater in 1940 than in 1939, on a daily average basis, which allows for the extra day of leap year. That gain was the result of a 9.7 percent increase in total domestic demand and approximately 25 percent decreases for exports of crude oil and of refined products in the aggregate.

In the first half of 1940, nearly all refined products were in greater over-all demand than in the similar period of 1939, despite decreases in exports of most products except lubricants and wax. The gains in total demand included those of 3.6 percent for gasoline, 10.5 percent for kerosene, 12.6 percent for light fuel oils, 5.8 percent for heavy fuel oils, 13.8 percent for lubricants, 8.1 percent for wax.

In the first 10 months of the European war, total exports of crude and refined oils were 15.4 percent smaller than shipments in the corresponding months a year previously. Shipments of crude oil were down 15 percent, and those of refined products 16.9 percent, with gasoline most seriously affected, while lubricant exports were stimulated.

Although figures on demand are not available beyond the middle of this year, it is indicated that there has not occurred subsequently any material change in the trends of either domestic or export requirements. The general trend of domestic consumption of gasoline, the industry's principal product, apparently has continued around 6 percent above the curve for last year; although gains for individual months have fluctuated considerably, because of weather conditions, the half-cent increase in the federal tax on gasoline July 1, and other circumstances.

Inventory Situation

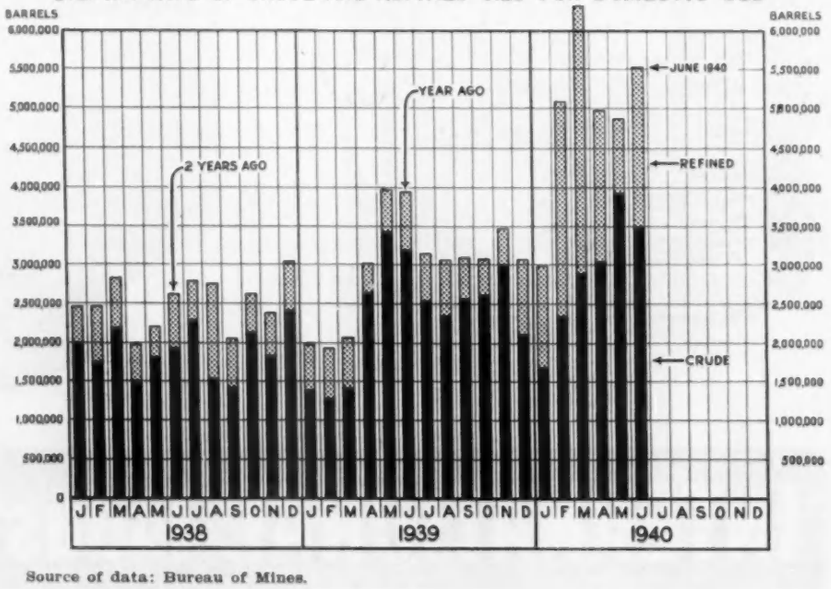
With exception of the supplies of gasoline, which are considerably larger than economically desirable, oil inventories are generally in sound relationship to prevailing and prospective demand. Gasoline stocks are about 11,500,000 barrels larger than at this time last year, and that increment wholly represents surplus gasoline, without which the industry could operate quite efficiently. For the stocks held a year ago were themselves considerably in excess of operating requirements and would have sufficed for taking care of somewhat larger demand, such as that which now prevails.

In anticipation of large demand in the fall and winter, the industry has been satisfactorily rebuilding depleted stocks of light fuel oils, and no repetition of last winter's scarcity of supplies is threatened.

Stocks of kerosene and heavy fuel oils are smaller than a year ago, while market requirements are larger. Consequently, markets for those products are firm.

Lubricant stocks are about 10 percent larger than at this time last year, but the inventories are moderate in relation to current and prospective market requirements.

U.S. IMPORTS OF CRUDE AND REFINED OILS FOR DOMESTIC USE



Source of data: Bureau of Mines.

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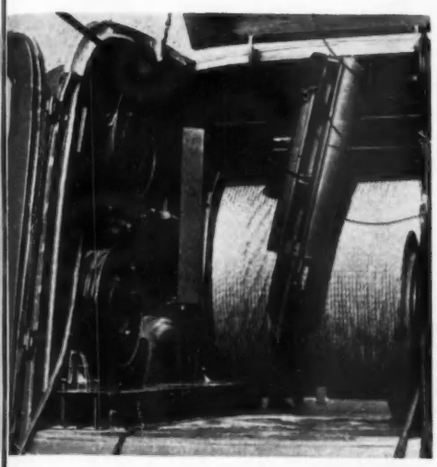
LANE-WELLS *Electrolog*



Electrolog's five-conductor steel-shrouded cable allows faster recording of four curves on a single round trip. The crew gets on and off the rig quickly to save you costly "down time."

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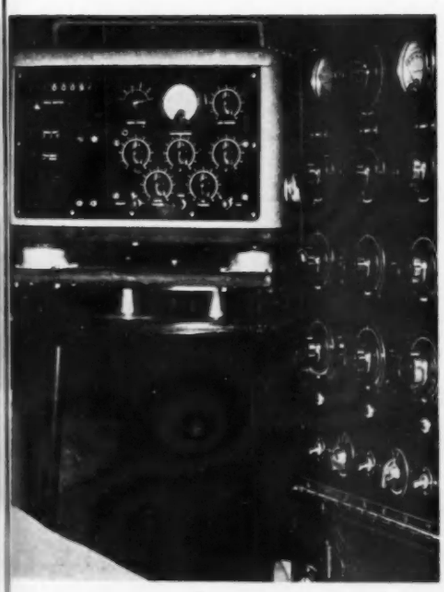
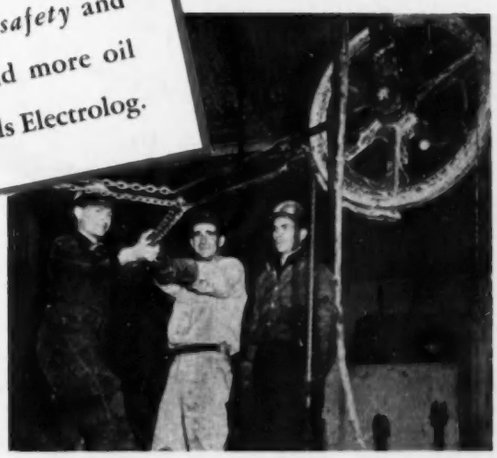
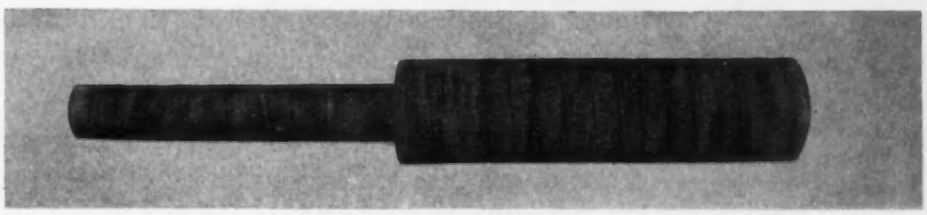


Recording of electrode depths is automatic. Controls are set before a run to eliminate any "chance of error from the human element."



Lane-Wells accurately calibrated measuring device is double-checked by a flag system to save time. Two standard scales, 100′ or 50′ to the inch, and a detail section, 20′ to the inch allow easy comparison.



Lane-Wells safety pull-out head provides maximum protection against expensive cable fishing jobs if formation caves in above the electrode. The shear pin is adjustable to break and allow the cable to be pulled free from the electrode.

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Plan to Reorganize Mexican Oil to Escape Bankruptcy

In personally directing the drastic reorganization of Mexico's government oil administration, a reorganization that contemplates the coordination of all directive activities into one unit, reduction of personnel by some 3000 workers and a return to wage and benefit schedules of very much the same basis as that which existed prior to the expropriation of foreign-owned properties, President Lazaro Cardenas has made quite plain that his recommendations of the past February to effect economies and increase efficiency were not mere idle words.

In his February "we have to save the industry" pronouncement, Cardenas declared the necessity existed for thorough reorganization of the industry, reduction of personnel and wages, abolishment of jobs obtained through union or political pull and "getting a full day's work out of regular working hours." At the time, he decried emphatically the apparently endless demands of labor stirred by firebrand and unscrupulous leaders. "In some instances, some of the labor leaders are treating the government oil administration as though it were in the same category as the foreign companies," the president asserted.

Cardenas' recommendations provoked much discussion and comment but resulted in little positive action except to disclose the existence of widespread dissatisfaction among the workers, a growing antagonism between the syndicates and the management of the government administration, and the prevalence of abuses and practices on both sides that were rapidly bringing the industry into dire straits.

Whereas the management, retreating to the attitude of the employer who demands retrenchment in costs in order to carry on with a regard for profits, proposed wage cuts and reduction in benefits for the 18,000 employes, the workers flatly charged that the crucial condition of the industry was due to mismanagement and that the workers should not have to sacrifice the gains in pay and benefits which they had been told were rightfully theirs through the conquest of expropriation.

Face Bankruptcy

As the controversy became more and more bitter, some startling disclosures relative to conditions in the industry were paraded before the public in the charges and countercharges made. Vicente Cortes Herrera, manager of Petroleos Mexicanos, production division, and Jesus Silva Herzog, manager of Distribuidora de Petroleos Mexicanos, sales division, of the government administration, late in July issued a statement to the effect that the industry was faced with a deficit, after two years of government operation, of nearly 68,000,000 pesos ($13,600,000 at the prevailing rate of exchange). The industry, they added, with in fact facing bankruptcy unless something drastic was done and done at once.

The workers replied that this situation was not to be blamed on them but rather to lack of efficiency on the part of the management.

In the face of this deadlock, Cardenas personally took over reorganization early in August, claimed office space in the oil administration headquarters (the former British Dutch Shell—Aguila—building expropriated by the government March 18, 1938), and announced that he would spend a certain part of his working day there in effecting the readjustments necessary.

"I came to cooperate with the manager and the workers in the reorganization of the industry," he explained to questioning newsmen.

Salient points of progress to date may be cited as follows:

Cardenas on July 24 issued presidential order calling for immediate reorganization of the industry. In this it was declared the government oil administration had found it necessary to make capital investments totaling 100,000,000 pesos in pipe lines, refineries, storage plants and other equipment; that the European war had cut off European export markets; that wage and benefit disbursements, due to increase in personnel, had gone above the 75,000,000 pesos annually fixed by the Labor Board award of December 18, 1937. In consequence, Cardenas declared, immediate readjustment of the economic situation was required. His eleven-point program for effecting such readjustment called for:

1. Issuance of bonds in lieu of savings fund payments to workers in December unless status of industry improves by the end of the year;

2. Suspension of payment of housing allowance for workers with salaries of 20 pesos a day or over, reduction in allowance for those earning more than 10 and less than 20 pesos;

3. Reduction of overtime to a minimum;

4. Suppression of positions considered unnecessary;

5. Reduction of salaries of administrative personnel;

6. Ten percent reduction of salaries of personnel receiving more than 700 pesos a month;

7. Limitation of vacations to six days a year;

8. Temporary or definite vacancies not to be filled unless positions in question are indispensable;

9. Authority to general managers to move administrative personnel throughout country and worker personnel within zone where employed;

10. Reduction of temporary workers to a reasonable minimum;

11. Suspension of payment of wages and expenses to syndical commissions, except in cases of members of the general executive committee, local executive commit-

tee, contracting committee and labor representatives on boards of directors.

This agreement, under pressure from the president, was signed August 7, by Cortes Herrera, Silva Herzog and Arellano Belloc as representatives of the government administration, and the general executive committee of the oil workers syndicate. A committee of ten members of the syndicate and ten of the administration was named to carry out the readjustment of personnel, it being understood that workers to be effected would be those entering the industry since the date of expropriation, March 18, 1938. In accepting the agreement, the syndicate did so, it explained, as a cooperative move, but without waiving syndical rights or conquests.

On August 9, Cardenas promulgated a decree setting up Petroleos Mexicanos as the single institution administering all oil enterprises of the government. By this decree, the former Distribuidora de Petroleos Mexicanos and the old General Administration of National Petroleum (AGPN), which functioned prior to expropriation, were merged with Petroleos Mexicanos, the new administrative unit, which will carry on all operations "relating to the petroleum industry, such as exploration, exploitation, refining and storage, as well as the distribution and transfer of the petroleum and its derivatives belonging to the nation . . ."

The new Petroleos Mexicanos will be directed by a board of nine members, five to be designated by the government and four by the workers. This decree became effective immediately.

Prior to the publication of this reorganization decree, Jesus Silva Herzog, manager of Distribuidora de Petroleos Mexicanos, sales division of the government administration, resigned in a bitter, critical message regarding conditions in the industry addressed to President Cardenas, a message made somewhat famous by Silva Herzog's declaration that he "was unaccustomed to deal with ruffians."

On the same day as the promulgation of the decree consolidating all the government's oil interests in the new Petroleos Mexicanos, President Cardenas named Vicente Cortes Herrera, manager of the old Petroleos Mexicanos, as general manager of the new organization, and Manuel Sanchez Cuen, formerly of the Ministry of National Economy, as assistant general manager.

In the meantime, as the reorganization plans are being pushed, the Federal Board of Conciliation and Arbitration is conducting hearing of the economic suit filed in July by Cortes Herrera and Silva Herzog, on behalf of the old Petroleos Mexicanos and Distribuidora de Petroleos Mexicanos seeking new collective labor contract in order to reduce expenses.

Interestingly enough this move by the government oil administration co-managers parallels exactly the move taken by the workers back in 1937 to obtain increased salaries and benefits from the foreign companies. The only difference is that the government administration is now asking relief from the increased wage scale the promulgation of which for the workers the government supported in 1937. Silva Herzog's position in the matter was an almost exact reverse of that he occupied in 1937.

It will be recalled that on May 28, 1937, the oil workers syndicate, seeking increased wages and benefits, called a general strike against the foreign companies. Thirteen days later, the syndicate called off the strike and adopted a new method of attack, this being submission of the controversy to the Federal Labor Board as an economic issue.

The Labor Board authorized investigation of the foreign companies' "economic ability" to pay the wage increases demanded by a committee of experts. The chief member of this committee was Jesus Silva Herzog.

After a detailed examination of the foreign companies' financial condition, this committee of experts rendered a decision that the companies' condition was so "extraordinarily lucrative" that the companies could afford to pay graduated salary increases averaging nearly 27 percent above 1936 schedules, or a total annual increase in wages and benefits of 26,329,393 pesos. The Labor Board approved this finding on December 18, 1937. Later the companies carried the issue to the supreme court but lost. Subsequently, President Cardenas decreed the expropriation, on March 18, 1938, of the foreign-held properties.

In the current situation, Silva Herzog, as one of the managers of the government administration (though now resigned), joined with Cortes Herrera in asking relief from the very wage increases that the committee of which he was a member recommended in 1937 against the foreign companies.

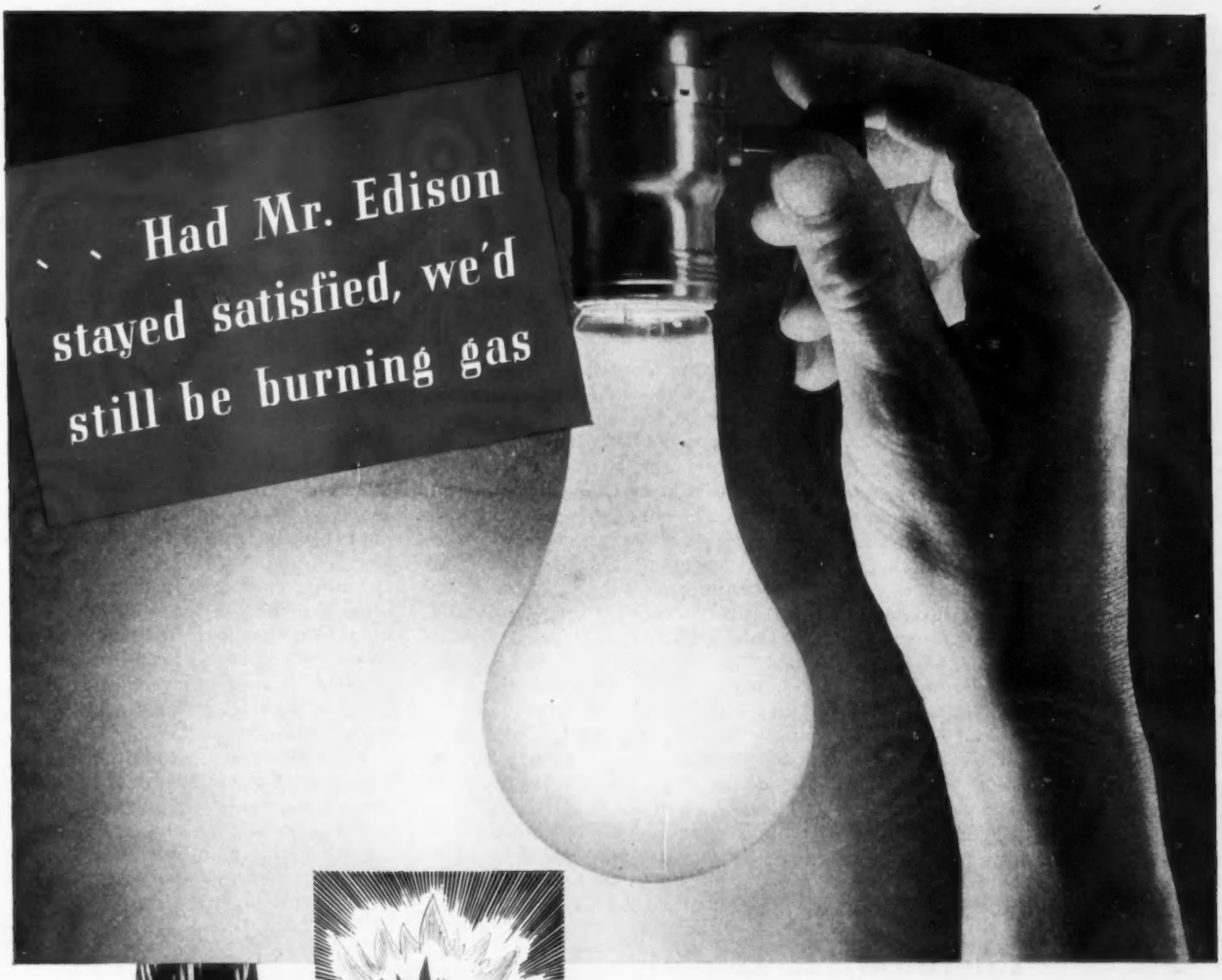
In the petition for economic suit, which was granted and which is now being heard, the co-managers of the government administration described the condition of the industry after two years of government operation as "of such grave character that, unless immediate correction is made, it would bring the petroleum industry to a state of utter bankruptcy."

It was set forth that the administration is faced with a "considerable deficit," falling exports, the need of large expenditures for repairs and maintenance, material increase in the number of employes and a payroll that exceeds the maximum of 75,000,000 pesos annually demanded of the foreign companies and authorized by the Labor Board. This latter figure is presumably arrived at by totaling the amount paid the workers by the foreign companies in 1936 (approximately 49,000,000 pesos annually) and the amount of the increase authorized by the Labor Board's award of December 18, 1937 (approximately 26,000,000 pesos annually).

The total of workers now employed was not specified in the petition but reliable sources place the number at 18,000 as compared with approximately 14,000 under the expropriated companies.

Much of the blame for the existing condition was placed by Cortes Herrera and Silva Herzog in the petition on the expropriated companies. It was declared that these concerns had actively attempted to close export markets to Mexican crude, had tried to disorganize domestic sales by various means, and during the last year of their operation of Mexican properties had failed to replace equipment. The latter action was declared to have made it necessary to make immediate and costly repairs. Expenditures to maintain the industry and increase its development since expropriated were stated to have reached more than 100,000,000 pesos.

The co-managers set forth that they had met the demands of the workers as to salaries and benefits insofar as possible, though not wholly. But in doing so, they added, they had had to sacrifice other items of regular expense, such as federal taxes, replacements and material necessary for operation,



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repairs, extension of facilities, payment of royalties and other obligations.

The end sought by the economic suit is authority, through finding the government administration economically unable to carry on with its present overhead, to cut wages and reduce personnel by revision of the collective labor contract.

The contention is raised that the currently operative collective labor contract, with its enlargement by the December 18, 1937, award, was negotiated between the workers and the foreign companies, and that when the companies refused to accept the decision of the Labor Board the contract in force was broken. Therefore, the government administration's position in asking for negotiation of new contract is well taken, the petition avers.

Provisions for the new contract asked are virtually the same as set forth in the eleven-point reorganization plan signed by representatives of the workers and the government administration August 7, following Silva Herzog's resignation.

Mexican newspapers have charged that crude contracts are being made at ruinous prices. Four days prior to Silva Herzog's resignation, El Mundo, daily newspaper in Tampico, announced the signing of a contract on June 22 of this year for the delivery by Distribuidora, of which Silva Herzog was manager, of a maximum of 18,000,000 barrels of Poza Rica crude to Industriales Petroleros, S. A., a Mexican company, delivery to be made to the buyer in New York with all charges paid at the "ludicrous price of 40 cents, U. S. currency, per barrel." The contract was characterized as the "most detrimental contract, from the point of view of Mexico, that has been signed for the sale of crude oil since the petroleum industry passed into the hands of the government." Terms of the contract were such that the price varies some, but well informed sources have expressed the opinion that Distribuidora would receive 40 cents in cash and the rest in transfer of credit against the government; a price of about $1.25 a barrel for crude delivered in New York that should have a value of about $1.40 per barrel. This takes into consideration export tax of 30 cents, U. S. import duty of 21 cents, and freight charges of around 28 cents. Distribuidora was to assume all charges. The contract was for a five-year period. Credits totaling 4,202,267.65 pesos against the government are said to be held by Industriales Petroleros.

While the question of settlement with the Sinclair interests for expropriated properties, effected the past April, has not been brought into the controversy, details of that settlement disclose another financial demand that the government administration has been faced with. Under terms of the deal, Sinclair is to be paid $8,500,000 in cash by the end of 1942 as indemnity for the properties of its four subsidiaries in Mexico affected by the expropriation. In addition, contract for delivery of a large amount of oil to Sinclair at a price reportedly 30 cents under the market was made — 20,000,000 barrels at 60 cents a barrel, reliable sources aver.

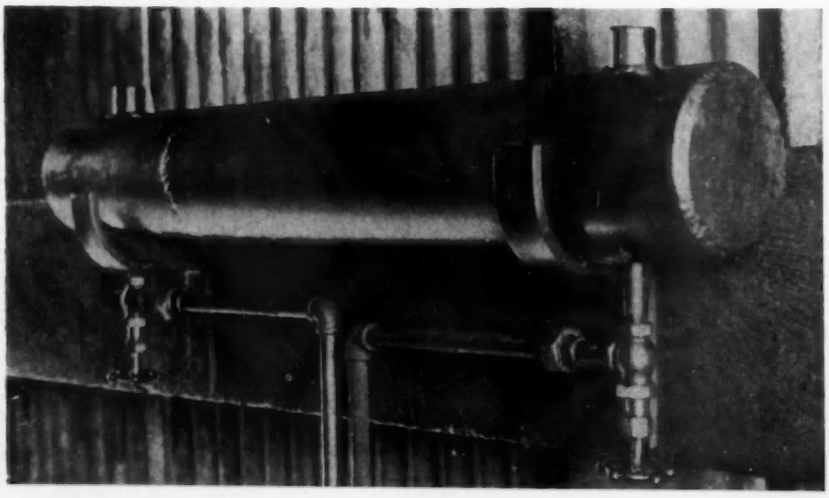
Under such a contract, Sinclair stands to net at least 30 cents per barrel on the deal, or $6,000,000 on 20,000,000 barrels. In addition, the $8,500,000 indemnity would bring Sinclair's total under the arrangement up to $14,500,000.

The Mexican Chamber of Deputies recently approved the agreement for payment of $8,500,000 as indemnity to Sinclair and Vicente Cortes Herrera, now general manager of the new government oil administration, announced August 13 that the second $1,000,000 installment on the obligation would be paid August 16.

Whether the government administration, now centered in the single agency known as Petroleos Mexicanos, will be able, even with drastic retrenchment, to see much light on the financial horizon this year is yet to be determined. Report submitted February 16 by a committee named by the boards of directors of the old agencies—Petroleos Mexicanos and Distribuidora de Petroleos Mexicanos—to study the 1940 budget, placed the indispensable budget for the year at approximately 256,000,000 pesos. To this, it was declared, must be added 140,000,000 pesos for taxes and reserves. It was announced that in view of the fact that no firm predictions could be made with regard to income from exports, and lacking complete accounting information at the time, a total of about 293,000,000 pesos was taken as a basis for income.

This showed expectancy at the time of a deficit for the current year of 103,000,000 pesos, or, at the prevailing rate of exchange (five pesos to one dollar) about $20,600,000.

Engine Oil Reservoir

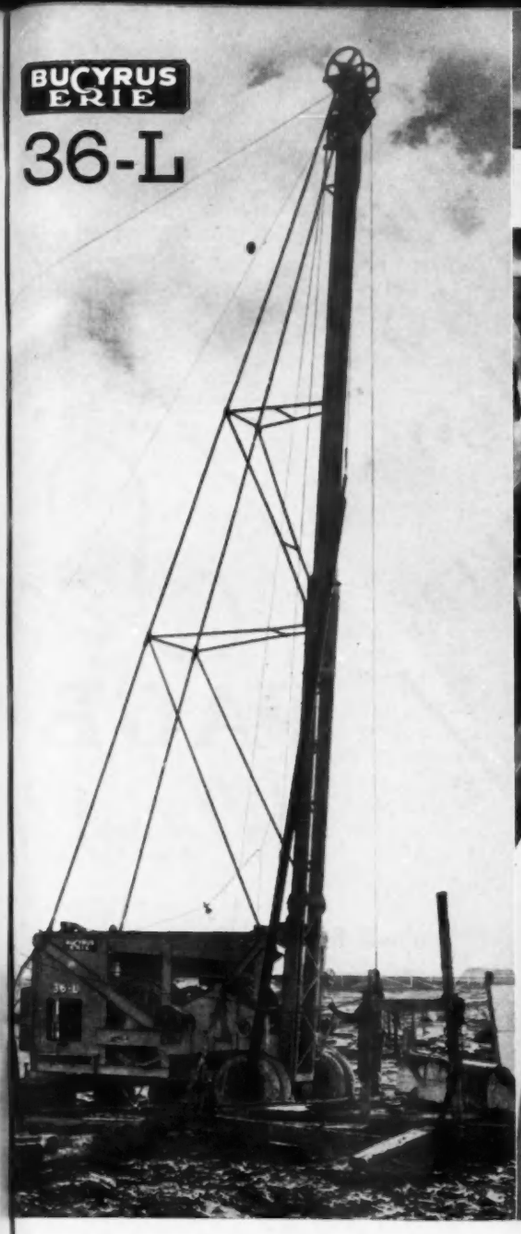


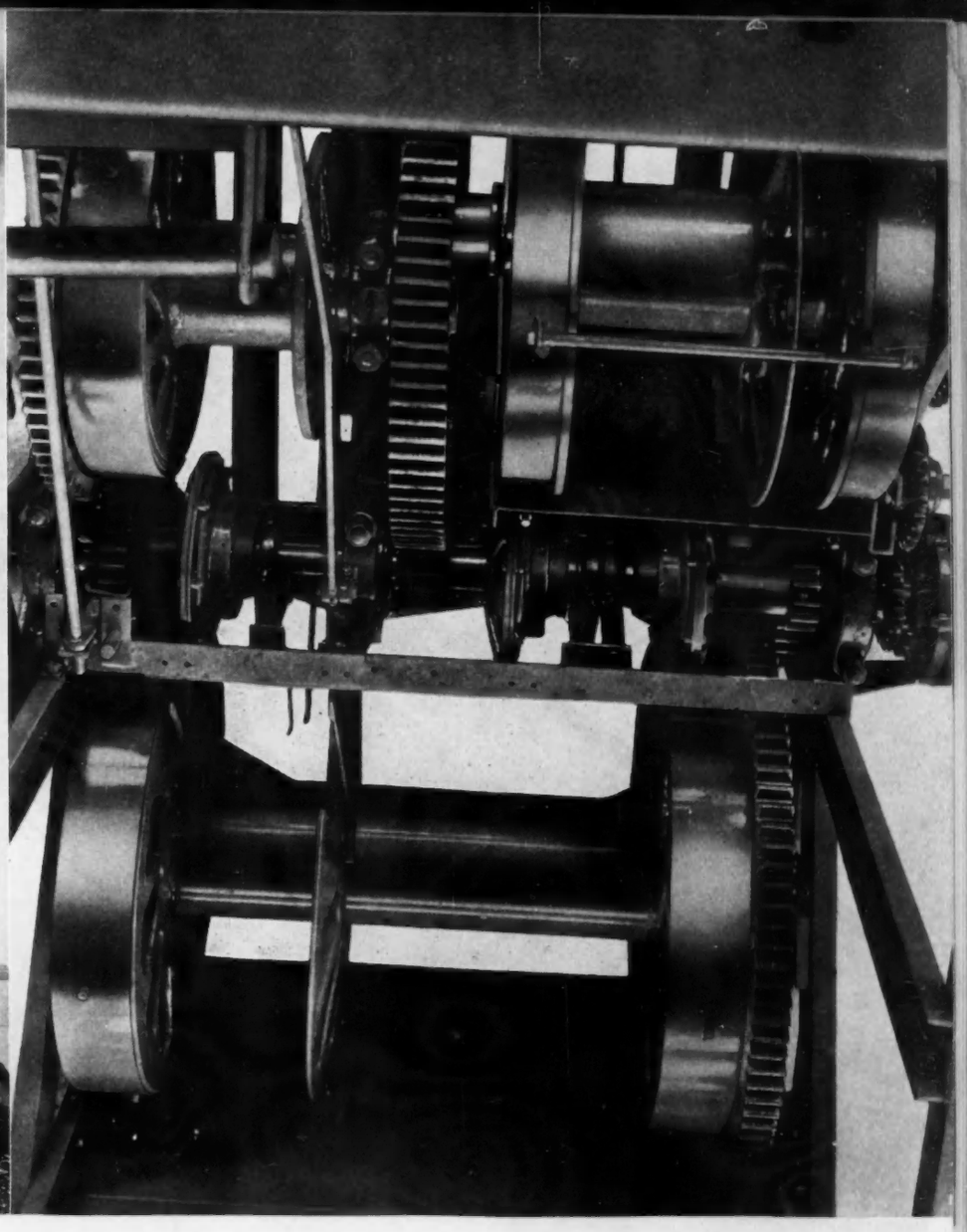
To insure certain pumping engines having sufficient lubricating oil to last for several days if necessary, one company installed shop-made supply tanks holding between four and five gallons. Tanks were installed on the engine house walls of those wells that most likely would be neglected in the event it should become impossible to service the engine regularly.

The tanks were made of 3½-foot lengths of 6⅝-inch casing with a steel disc welded to each end. On the bottom of the tank at each end a hole was cut out and tapped for a ½-inch nipple and valve. The assembly is supported by two flat steel brackets curved to fit the tank. Two ½-inch pipes lead downward, across the floor, and up to the forced-feed lubricator on the engine. Should either of the two lines become clogged, the other can supply the flow.

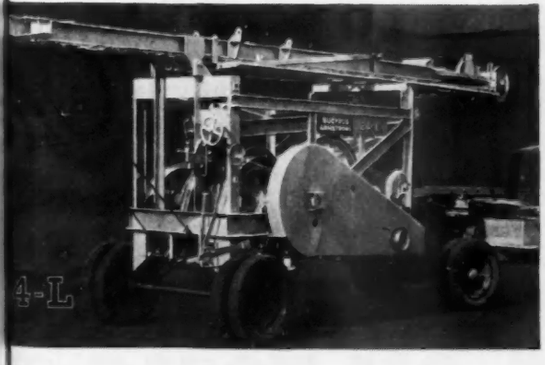
BUCYRUS ERIE

36-L





SPUDDING GOES MODERN



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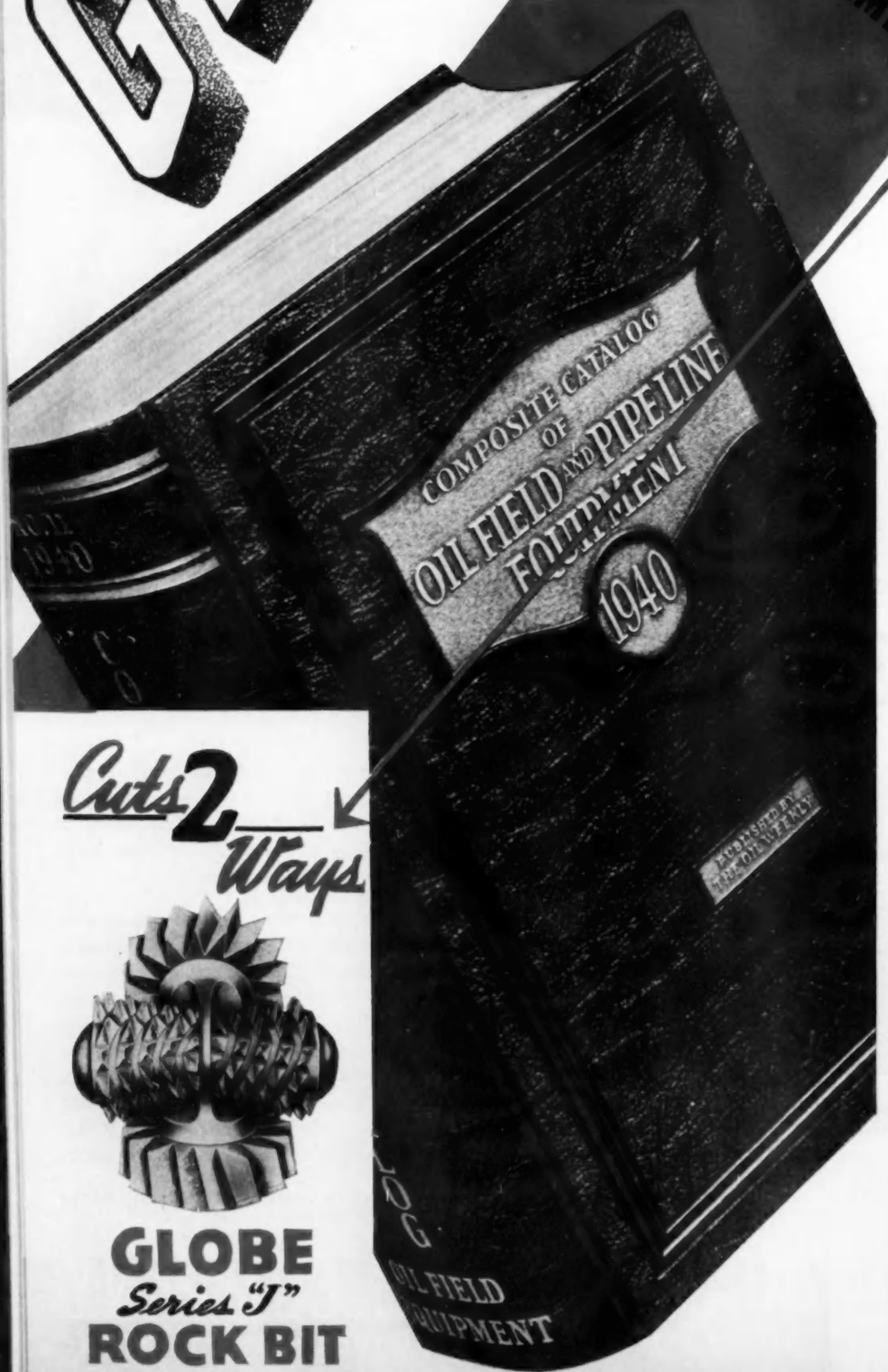

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811 to 830

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Spindletop's Discovery Blew in January 10, 1901 . . . Promoted by Captain Anthony F. Lucas . . . Financed by Guffey & Galey . . . Drilled by Hamill Brothers, Contractors . . . A personal account written

By A. W. Hamill, The Driller

IN 1855, in the City of Spalatro, Dalmatia, Austria, was born the man who was destined to promote the drilling of what turned out to be, in its day, the largest oil producing well in the United States. This man, Anthony F. Lucas, promoted the first successful well at Spindletop, known as The Lucas Gusher.

In August, 1900, the firm of Hamill Brothers, composed of J. G. and A. W. Hamill, oil well contractors of Corsicana, Texas, received from John H. Galey, of Guffey & Galey, Pittsburgh, a letter stating that a Mr. Lucas would call on us shortly. His purpose would be to get our contract price for the drilling of a wildcat well to be located within a few miles of Beaumont, Texas. Any agreement made with Captain Lucas would be financed by Guffey & Galey. In a few days, Captain Lucas called, and in outlining the proposed well with us, is was decided that one of us should make a trip to Beaumont to give the locality a check-over before quoting our price. As my brother, J. G., was our business manager, he made the trip. While there, he and Captain Lucas agreed on a price of $2 per foot for a 1200-foot test, with Guffey & Galey to furnish all necessary pipe.

Early in October we loaded our rotary drilling outfit at Corsicana, Texas, for shipment to the location of the proposed well. As I was the unmarried member of the firm, and J. G. thought he should look after our remaining drilling equipment in Corsicana, it fell to my lot to go to the location and make necessary arrangements for derrick lumber, teaming, fuel, etc. After this was arranged, I wired my brother to send the other boys that were to help me on this well. Our crew was made up of the following: my brother, Curt, Henry McLeod, Peck Byrd and myself.

Derrick Laid On Ground

Our first work was to build the derrick. It turned out to be quite a job for us to do alone, for in the Corsicana field we had experienced derrick crews who erected all derricks. We laid the lumber out on the ground in shape of a derrick, and cut it from this pattern. This worked fine for us. We soon had installed our drilling equipment,[1] which consisted of one 25-horsepower boiler, two 8x5x10 Smithvale circulating pumps, American Well Works rotary and drawworks, two swivels, an Oil Well Supply Company engine, with necessary chain tongs and small tools.

Fuel used on the well was slabs of water-soaked logs cut by the Beaumont Lumber Company mill. The slabs were so wet at times that the water would put out the fire in the boiler. Our fireman, Peck Byrd, had his hands full urging the slabs to burn and trying to keep up steam. After starting drilling, we set about 20 feet of 10-inch surface pipe. Drilling progressed nicely until we reached about 160 feet, when circulation was lost. We tried repeatedly to overcome this,

[1]The Oil Weekly's editorial policy does not permit the mention of equipment by manufacturer's name or trademark in feature articles, but an exception is made here in the light of historical significance.—Editor.

Lucas Monument Proposed

NEXT to the original Drake well, the Lucas gusher at Spindletop is recognized as the most important discovery in the oil industry. Colonel Drake's first oil well at Oil City was the beginning of the modern oil industry, but it was the completion of Anthony F. Lucas' well near Beaumont in 1901 that started the industry on its rapid rise to present world prominence. Some of today's larger oil companies as well as prominent oil men began their oil careers during the early days at Spindletop following drilling of the Lucas gusher. To oil men everywhere, the accompanying account of the drilling of the Lucas gusher, written by the man in charge of drilling, will prove an interesting leaf from the history of oil.

Under the auspices of the Lucas Gusher Monument Association (See THE OIL WEEKLY, page 40, August 26, 1940) plans are being made to erect a suitable monument at the site of the Lucas gusher, near Beaumont, at the time of the fortieth anniversary of the well's completion on January 10, 1941. Officers of the association are: J. Cooke Wilson, president; S. W. Pipkin, vice president; Scott W. Myers, secretary, all of Beaumont, and Marion E. Brock, Gulf Oil Corporation, Houston, treasurer. No direct funds will be solicited for construction of the monument, but contributions in amounts from $100 to $500 will be accepted from companies and individuals who started in the oil business following the Spindletop discovery. Anyone desiring to participate should get in touch with one of the officers of the association.

but failed. Our decision then was to rotate and wash in all the 8-inch pipe we could. After that, we put in the 4-inch drill pipe for wash pipe and rigged up a heavy drive block to work around the 4-inch, with a heavy drivehead for the 8-inch. We used the driveblock on the order of a pile driver from the cathead on the drawworks. This was done by hand by pulling the cathead line, and then giving it a quick slip in order to give the hardest blow possible. We took turns on this man-killing job of working the catline, and every little while we would run the circulating pump to wash out the sand from below the bottom of the 8-inch pipe.

In this manner we made headway every day. Some days we would gain only a few feet, then at times the sand would wash out better, allowing sand around the 8-inch to settle more freely, which would assist our driving. This method was continued until the Gumbo formation was reached at 445 feet, making 285 feet that we mauled down with cathead and drive-block. During this laborious task, I began to see why other drilling contractors, like the late W. B. and J. R. Sharp, as well as others, had failed in mastering this thick bed of quicksand. I found that our well was the fifth attempt to drill for sulphur or oil on what was known as "Spindletop."

After landing the 8-inch in Gumbo, at 445 feet, we progressed nicely for about 200 feet, then to our surprise one day, the circulating mud began to boil or flow up through the rotary table and in a very short time muddy water and gas was flowing half way up the derrick. This did not last long, as it was caused by a gas pocket, but it caused us to worry as to what might happen should it occur again with greater force. Until this happened, we had worked only during the day. After this gas blowout, we decided it best to drill during the day and keep the circulating pumps going at night. This decision put an additional burden on us, for there were only three of us working on the job. McLeod had left during the early arduous task of driving the 8-inch pipe. At this point we three, Brother Curt, Peck Byrd and myself agreed we could keep going by one of us working eighteen hours each day —that is, one of us would work eighteen hours every third shift, but all three working during the day. Our work at night, while alone, was to keep up steam, keep pumps in motion and drill pipe rotating slowly, and make some hole if we could, with the thought in mind that such an operation would help prevent gas blow-outs and keep drill pipe from sticking. Under this method of operation, we made satisfactory progress.

Showing at 850 Feet

On December 9, it was my turn to get up at midnight for my 18-hour shift. As usual, while I was on duty, I tried to make all the hole I could. At this time we had put up an additional joint of drill pipe. I do not recall which one of the boys I relieved, but he had not been able to make much hole. He left almost the full length of drill pipe above the rotary table. At about three o'clock in the morning, I noticed the pump working more freely and rotary turning very easily, so I began to let the pipe down. Still both pump and rotary worked freely. I kept it going and soon had about all the length of pipe down, when, at about four o'clock, I detected a gassy odor. I tried to investigate, but our lights were very poor. As daylight began to appear, I could detect oil in the ditch and slush pit. When Curt and Byrd came with my little bit of breakfast, the slush pit had a big showing of oil on it. We at once sent Byrd for Captain Lucas, who at that time lived within 1½ miles of where we were drilling. On his arrival, he showed some excitement and asked how much of a well I thought it would make. The only experience any of us had was at drilling in small wells in the Corsicana field, but I thought it would easily make 50 barrels per day. After Captain Lucas watched the circulating ditch a while, he asked us to put up another joint of drill pipe in order to see how much oil formation there was. After making about 35 feet through the soft sand, we struck hard going. The depth at this point was about 880 feet. We spent the morning watching the oil showing, and deciding what was the most logical and practical procedure to follow. Captain Lucas decided to wire for Mr. Galey and have us set our 4-inch drill pipe as a test string. We did this, and on the arrival of Mr. Galey, started bailing out with a small flow resulting. In running the bailer again, we found that the soft sand had heaved up in the pipe more than 300 feet. It was then decided to wash out the well with 2-inch pipe, but without great success. The washing and bailing was attempted several times, with no definite results. After Mr. Galey had spent a week with us, he decided we should try to pull the 4-inch, if possible. We were then to set the string of 6-inch that we had on hand through this heaving sand and see if we would get any more showing in the next 300 feet. Fortune favored us in pulling the 4-inch, and in a short time we had the 6-inch landed at 860 feet on the hard formation below the oil sand.

Shut Down for Christmas

This was done December 24, and Mr. Galey could see we three boys were worked down. He suggested we shut down for Christmas. He gave us some money on our contract account, which enabled my brother Curt and me to catch the night train to Corsicana for the holiday week.

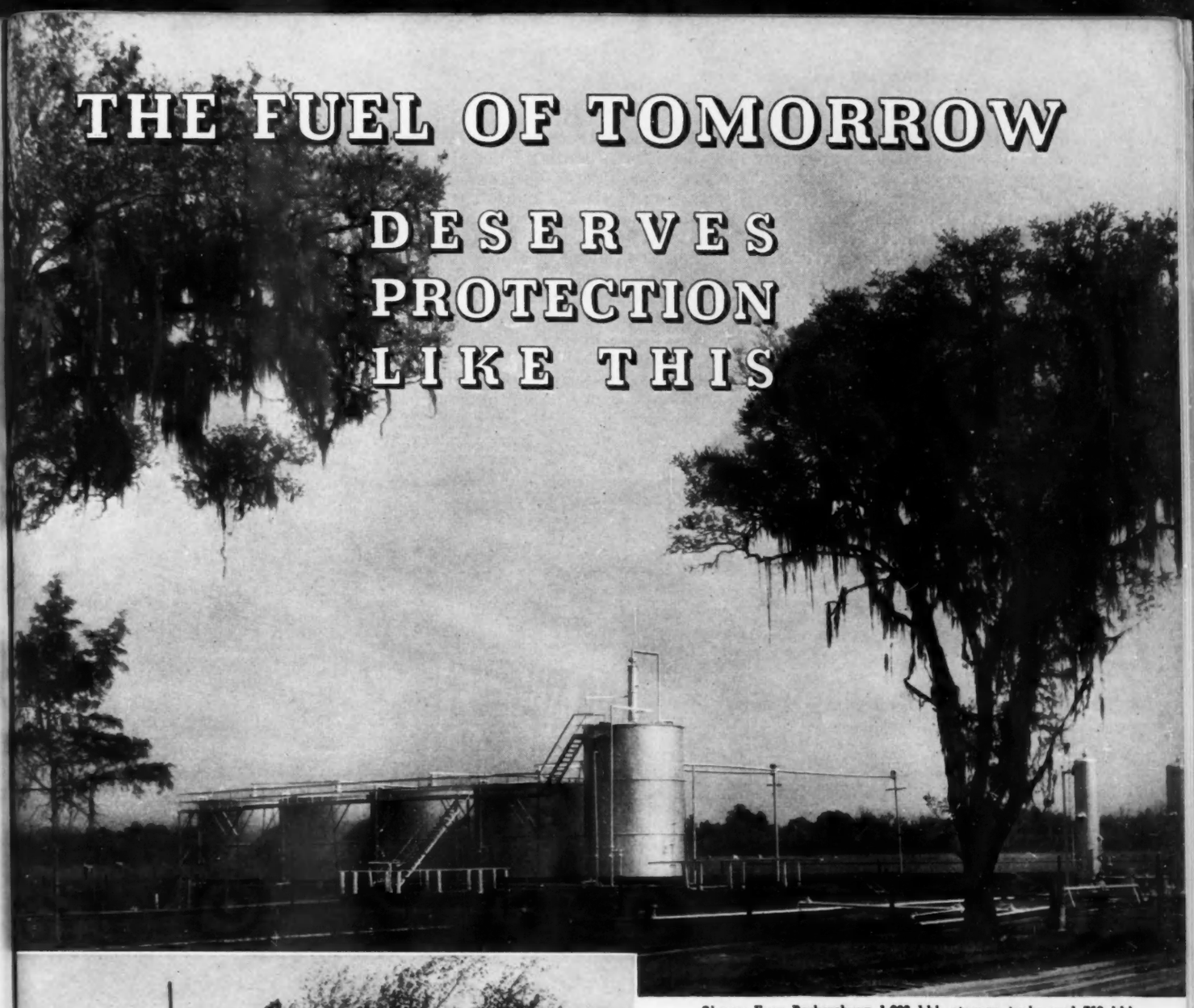
January 1, 1901, we were back on the job. In the following seven days we made 140 feet of hole, making a total of 1020 feet, where we seemed to hit a crevice. In letting pipe down in one place it would go at least 6 inches farther than it would by giving the pipe a quarter turn. In rotating, our pipe would hang up and jerk the rotary chain to pieces. We kept grinding away without making any headway.

It Blows In

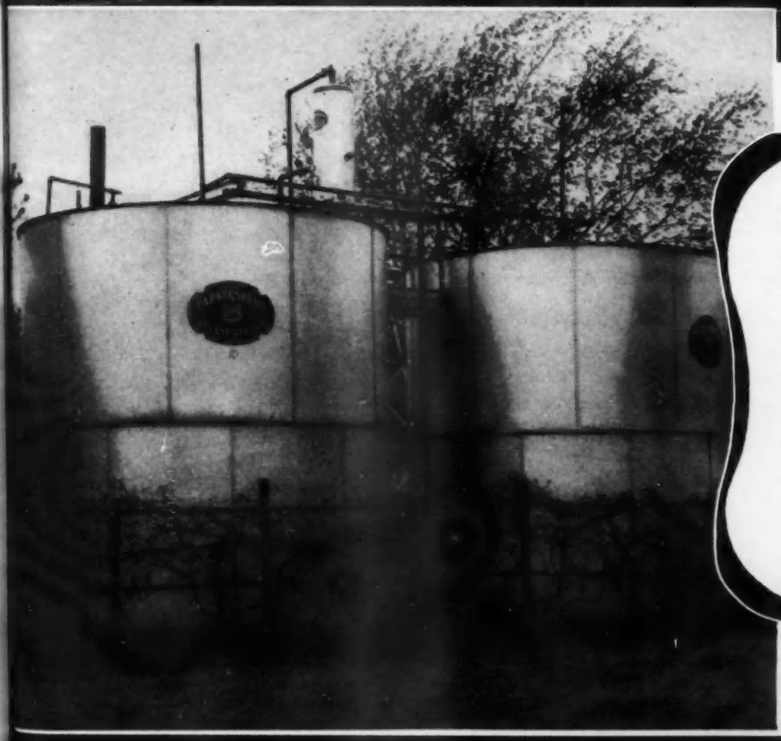
On the ninth, I wired my brother, Jim, to express a new fishtail bit, with the hope of better results. I met the train in Beaumont the morning of the tenth, got the ordered bit, and drove back to the well. We put the new bit on and had about 700 feet of the drill pipe back in the hole when the rotary mud began flowing up through the rotary table. It came so fast and with such force that Curt, who was up on the double boards, was drenched with mud and water and had a hard time getting out of danger. Soon the 4-inch drill pipe started up through the derrick, knocking off the crown block, and shooting through the top of the derrick, and breaking off in lengths of several joints at a time as it shot skyward. All this happened in much less time than it can be told. After the mud, water and pipe were blown out, gas followed, but only for a short time. Then the well was very quiet. We ventured back, after our wild scramble for safety, to find things in a terrible

THE FUEL OF TOMORROW

DESERVES PROTECTION LIKE THIS



Above: Four Parkersburg 1,000 bbl. storage tanks and 750 bbl. settling tank with two 3' x 16' Parkersburg-Smith Separators near Bay City, Texas.



"If it's worth drilling for and producing, it's worth careful handling above ground" . . . so figure the long list of quality-minded producers who are solving their crude oil handling problems before they arise. They're simply turning their lease storage problems over to Parkersburg, builders of quality lease tanks and separators. These operators are familiar with Parkersburg's nation-wide warehouse stocks of tanks and separators. They know they can get them erected quickly, and know from long experience that Parkersburg quality means life-of-the-lease service. The two batteries of Parkersburg bolted steel tanks and Parkersburg-Smith separators pictured here are just two of the thousands of Parkersburg tank batteries throughout the world which will still be doing the same good job many years from now. Let your Parkersburg man talk tanks and separators with you. He's as near as your telephone.

THE PARKERSBURG RIG & REEL COMPANY

PARKERSBURG, W. VA.

DALLAS HOUSTON - TULSA - LOS ANGELES - NEW YORK

C-3-40

At left: Parkersburg High 500 bbl. storage tanks and Parkersburg-Smith OAJ Separator near Centralia, Illinois.

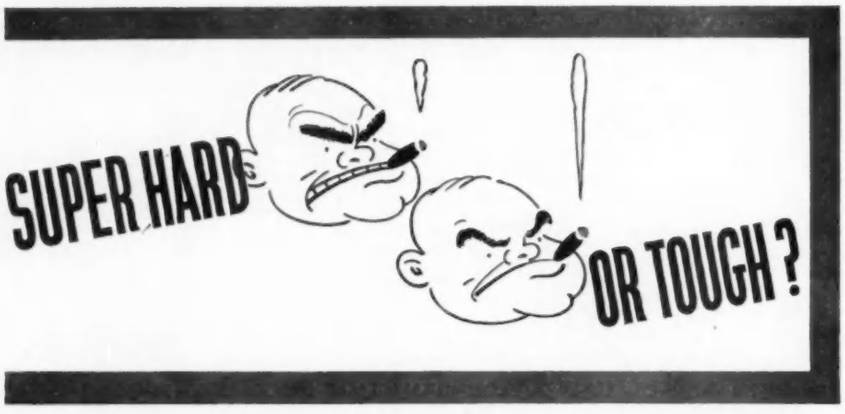
PARKERSBURG DEPENDABLE LEASE STORAGE TANKS

mess with at least six inches of mud on the derrick floor, and some damage done to our equipment. Naturally, we were all disgusted. We started shoveling the mud away, when, without warning, a lot of heavy mud shot out of the well with the report of a cannon. It was followed for a short time with gas, then oil showed up in head flows. In a very short time the oil was going up through the top of derrick and rocks were being shot hundreds of feet into the air. Within a very few minutes, the oil was holding a steady flow at more than twice the height of the derrick. As soon as I pulled myself together, Peck Byrd was again started on the run to notify Captain Lucas. Byrd breathlessly gave the report to Mrs. Lucas, and she at once located Captain Lucas by phone at Louie Myers' store in Beaumont.

It was not long until we saw Captain Lucas coming over the small hill with his horse in full run. At about this time he decided his horse was too slow, so the captain jumped, or rolled, from the buggy, picked himself up, and ran up to me, shouting, "Al! Al! What is it?" When I told him it was oil, he exclaimed, "Thank God," and grabbed me and hugged me good and hard.

By this time, which was about 11:30 a.m., farmers who had heard the roar and could see the oil flowing, began to show up. In a very short time people began to come by horseback, buggy, and on foot. Then we began to think of the fire hazard, and at once engaged watchmen from the crowd to see that no smoking was allowed. Some time that day Captain Lucas again wired for Mr. Galey. During the night the captain located me and said Mrs. Lucas insisted that he take me home with him so I could get a little sleep and have some breakfast. While we were having breakfast, the first oil men arrived at his house on the way to see the big gusher. They were J. S. Cullinan, S. M. (Golden Rule) Jones and T. J. Wood from Corsicana, Texas. My brother, Jim, came the following day. In the meantime, hundreds were arriving, excitement was running high, and propositions were being made to shut in the huge gusher.

On the arrival of Mr. Galey, three days later, he, Captain Lucas, Jim and myself went to a room in the old Crosby House. At once Captain Lucas began relating some of the propositions made to close in the wild well, estimates running as high as $10,000. After Mr. Galey listened a while, he asked Jim what he thought about our shutting it in. Jim assured him that we felt we could do the job. At that, Mr. Galey said in a very quiet way, that we had drilled the well and should have the chance to do the rest. Beginning our work at once, the necessary fittings were ordered by wire. After receiving them and working in a rain of oil for four days, all fittings were in place. Because of the fact the well kept heaving chunks of rock, Mr. Galey thought it best to wait for that to cease for fear the valve might be damaged. It was about noon on the tenth day that he gave the signal for my brother to rush in through the downpour of oil and close the valve on a well estimated by oil men to be making from 70,000 to 100,000 barrels of oil per day. With the closing of the valve, Hamill Brothers' responsibility as contractors ended in the completion of the wonder well that started Texas on the road toward being the largest oil-producing state in the Union.



THIS PUMP BARREL IS *BOTH!**

FLUPACO'S "IMPROVED INSERT" Pump Barrel is not *only one solid* piece end to end, but is made under a new process that combines both *extreme hardness* and *toughness* in the one piece of metal.

That's a miracle of modern metallurgy, for it wasn't long ago that a metal could be hard (and brittle) . . . or tough (and not so hard) . . . but not *both* at the same time.

But look at these physicals for the "IMPROVED INSERT" Pump Barrel: *Tensile Strength—145,000 p.s.i.* . . . a sizeable tensile in *anybody's* language. *Hardness—64 to 70 Rockwell "C" Scale* . . . and mister, that's *hard*—hard enough to stand plenty of severe service under the most abrasive conditions.

Another thing—don't forget that the "Improved Insert" barrel has an inside wearing surface deep enough to permit numerous re-hone jobs . . . an important point that means less maintenance expense.

Combine those features with the *rigid* one piece barrel that has no joints to get out of alignment . . . or leak . . . or cause uneven wear . . . and you have pump performance that will open your eyes.

Altogether, there are more than a dozen new performance features about this "IMPROVED INSERT" Pump that you should know about. Before you buy *any* pump, let us show you what the *jointless* barrel of the "IMPROVED INSERT" Pump means to your pumping costs. Your nearest Fluid Packed dealer has the information . . . or write direct for 8 page illustrated bulletin. No obligation, of course.

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This one for SAFETY!

▶ If you're looking for an easy-flowing, hard-setting cement with a retarded set that will protect your well investment—even though the job may be delayed for hours—and even though the hole is deep and the temperature and pressure high, specify UNAFLO for your next down-the-well cementing job.

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▶ If saving time is all-important, Atlas High-Early Cement is your best bet. It gains strength rapidly and so speeds up cementing of surface and conductor pipe, and rush construction of rig foundations and cellars.

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Keep drilling clicking along like clockwork. Operators everywhere specify UNAFLO or Atlas High-Early—the cements that are built for oil men and for oil field work. Stocks are readily available. Delivery to location is quick. Experienced service men will help you with your toughest cementing problems. Universal Atlas Cement Co. (United States Steel Corp. Subsidiary), Amicable Building, Waco; Tulsa; Oklahoma City; Kansas City; Chicago and Birmingham.

UNIVERSAL ATLAS OIL WELL CEMENTS

OW-U-17

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for the toughest pumping job

Put Bethlehem's new X-1 Sucker Rods on your worst well—with heaviest duty and highly corrosive fluids—and look forward to greatly improved performance and reduced lifting costs.

The X-1 rods have been tested and proved under severe conditions of corrosion fatigue, pitting and embrittlement. They have given remarkable performance in some of the notoriously tough wells in the Mid-Continent field, notably in Smackover and El Dorado, Kansas.

They are fully normalized, and are made of a "balanced" alloy which provides desirable physical properties without drastic heat treatment. This means that the steel has enhanced resistance to the destructive action of complex alternating stresses and corrosive fluids.

Steel in Bethlehem X-1 rods has a tensile strength of 100,000 p.s.i. and an exceptionally high ratio of yield point to tensile strength. This assures rods that have excellent working characteristics without sacrifice of ductility. In addition, X-1 rods have good resistance to shock, fatigue and wear.

Typical Physical Properties

Yield Point	75,000 p.s.i.
Tensile Strength	100,000 p.s.i.
Elongation in 2 in.	35%
Reduction of area	60%
Brinell Hardness	207

Other Sucker Rods Available

Other Bethlehem Sucker Rods are the X-Mayari, for heavy pumping in corrosive wells, and the XX Copper-bearing Sucker Rods, for medium pumping duty in moderately corrosive wells.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

HIGHLIGHTS IN THE WEEK'S NEWS

Washington

Start Congressional Action On Excess Profits Levy

Excess profits taxes of 25 to 50 percent of the amounts by which earnings exceed those of 1936-39 will be applied to the 1940 incomes of petroleum and other corporations under tax legislation now moving through Congress.

The pattern for the new measure took tangible shape last week when the House Ways and Means Committee approved levies starting at 25 percent of the first $20,000 of excess profits, and running up to 50 percent of profits in excess of $500,000, plus an additional normal tax of 4.1 percent, which will make the total effective normal tax 25 percent.

In lieu of computing profits upon the average earnings for the 1936-39 base period, however, corporations may elect to compute their tax upon the basis of invested capital over that period, in which event the levy will start at 20 percent of the first $20,000 and run up to 45 percent on excess profits over $500,000. Where the excess profits are based on invested capital, the additional normal tax will not apply.

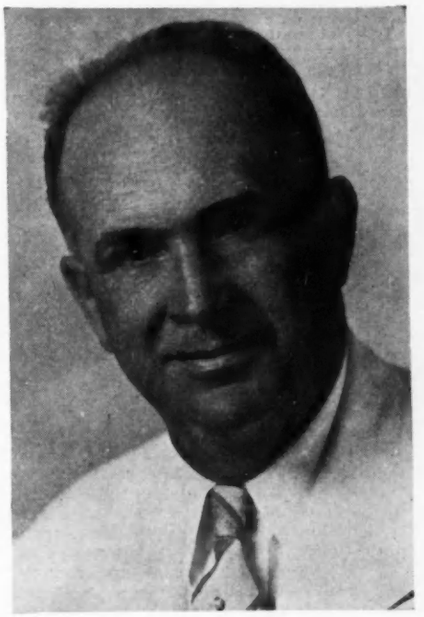
Corporations computing their tax on the basis of invested capital are to be allowed a credit of 7 percent on capital up to $500,000, and 5 percent on capital in excess of that amount.

A number of relief provisions were incorporated in the bill by the committee, under which corporations which suffered during the base period from floods, fires or other losses which were not covered by insurance are to be allowed to add those losses to their income in computing their base-period average, and corporations which suffered capital losses will be permitted to reduce the amount of invested capital to the extent of earned capital lost.

Name Personnel of Regional Defense Committee

Charles A. Miller, safety manager for The Texas Company and recently appointed by Secretary of Labor Frances Perkins to the post of southwestern regional representative of the National Committee for Conservation of Manpower in Defense Industries, announced that the following petroleum and petroleum equipment safety experts have been asked to join a committee representing Texas, Oklahoma, Louisiana and Arkansas:

R. B. Roaper, Humble Oil & Refining Company; William Moeller, Lone Star Cement Company; A. W. Breeland, Lone Star Gas Company; H. W. Boggess, Sinclair Prairie Oil Company; R. S. Huffman, Oklahoma Natural Gas Company; Tim Maffitt, Jr., Houston Oil Company of Texas; C. L. Hightower, United Gas Pipe Line Company; J. L. Manes, Sun Oil Company; R. G. Naul, Hughes Tool Company; W. W. Weldon, Standard Oil Company of Louisiana; S. D. Saltonstall, Lion Oil & Refining Company; F. P. Werner, American Republic Corporation, and Harvey Williams, Pan-American Petroleum & Tansport Company.



C. A. MILLER

The committee will pursue a policy of "diplomatic aggressiveness" in assisting companies holding government contracts in the organization of training and safety programs, thus providing more assurance of rapid delivery of defense materials, and giving private management and labor the expertness of large-industry accident control.

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Allowables

Texas Allowable Slashed In New 90-Day Order

The Texas Railroad Commission has issued orders, effective September 1, which will provide for production of approximately 1,266,065 barrels daily during the following 90 days. Despite increases in several fields, the new allowable is 54,145 barrels daily less than consumer demand for Texas oil as estimated by the United States Bureau of Mines. This is about 5 percent under the bureau's estimate and it is probable that other Mid-Continent states will fix allowables in this proportion, as such action was suggested at the recent Interstate Oil Compact meeting.

The basic allowable fixed for Texas was 1,647,725 barrels. However, the commission provided for closing most fields during nine days of each month. Fields will be closed on September 1, 2, 8, 14, 15, 21, 22, 29 and 30; October 5, 6, 12, 13, 19, 20, 26, 27 and 31; November 2, 3, 9, 10, 16, 17, 24, 28 and 30.

By closing the fields on these days, the net allowable would be reduced to 1,153,408 barrels. However, provision was made for allowing 148 fields, including the entire Panhandle, to produce on the days when other fields are closed. The total allowable for these fields which will remain open is 483,733 barrels, or an average of 145,120 barrels each day for the 90-day period. This increases the net allowable to 1,298,528 barrels.

Texas oil producers, however, invariably produce about two and one-half percent less than the allowable assigned. This would amount to 32,463 barrels, and reduce the estimated net production to 1,266,065 barrels.

The commission apparently attempted to supply the market for oil wherever it existed. The increases granted were widespread. West Texas gained 23,000 barrels; North Texas was raised 7000 barrels; Southwest Texas was increased 20,000 barrels, and Gulf Coast fields were raised 16,000 barrels. These increases, together with those resulting from shutdown exemptions, will do much to supply consumer demand which has developed for particular oils in certain fields during the past two years.

Set out below is a list of the fields which will be exempt from shutdowns:

Luling Branyon, Salt Flat, Ezzell, Cordele, Mauritz, McFaddin, Mission River, Oakville, Placedo, Plummer, New Refugio 4900-foot sand, Victoria, West Ranch, South Burnell, Caesar, Angleton, Arriola, Bay City, Beaumont West, Joe's Lake, Lochridge, West Orange, Old Ocean, Kubela, Bammel, Barbers Hill, New Batson, Boling, Brenham, Buckeye, Cedar Point, South Cotton Lake, Esperson Dome, Eureka Heights, Eureka Heights Deep, Goose Creek, Hardin, High Island, Old and New Hull, Humble, Livingston, Manvel Miocene, Manvel Oligocene, New Mykawa, Sandy Point, Satsuma, West Columbia New.

Adami, North Casa Blanca, Cedro

September Allowables to Hold Crude Oil Production Below Estimated Market Demand

(Barrels Daily)

STATE	Bureau of Mines Estimate of Demand	State Allowable Beginning of Month	Excess or Deficiency of State Allowable	Percent Excess or Deficiency
Arkansas	69,700	75,105	+ 5,405	+ 7.8
California	593,000	[1]571,000	— 22,000	— 3.7
Kansas	170,700	[2]170,700	.....	.....
Louisiana	274,700	274,854	+ 154	+ 0.1
Michigan	55,700	[3]52,000	— 3,700	— 6.6
New Mexico	105,300	[4]102,000	— 3,300	— 3.1
Oklahoma	397,000	[5]390,000	— 7,000	— 1.8
Texas	1,320,300	[6]1,298,528	— 21,772	— 1.6
Total 8 Prorated States	2,986,400	2,934,187	— 52,213	— 1.8
Other States	637,900	.....	.....	.....
Total United States	3,624,300	.....	.....	.....

[1] Recommendation of Central Committee of California Oil Producers.
[2] Estimated same as Bureau of Mines forecast of demand, as state has been adopting figures close to forecasts.
[3] Estimated production permitted under prescribed regulations.
[4] Estimated about same amount below Bureau of Mines forecast as in August.
[5] Allowable same as for August in first 9 days of September; quotas yet to be fixed for remainder of month.
[6] Daily average, considering general shutdowns on September 1, 2, 8, 14, 15, 21, 22, 29 and 30.

Hill, Comitas, Cuellar, Fitzsimmons, Kohler, Kohler Deep, Loma Vista, Mirando City, Moca, Peters, Charamousca, Clara Driscoll, South Clara Driscoll, Cole West, Colmena, Eagle Hill, El Tanque, Escobas, Glen, North and South Government Wells, Hoffman, Jennings, North Killam, Labbe, Las Animas, Loma Novia, Lopez, Lundell, Midway, Minnie Bock, Mirando Valley, O'Hern, Oilton, East Peters, Piedre Lumbre, Premont, Rancho Solo, Rancho Solo Extension, Sarnosa, Saxet, Seven Sisters, Seven Sisters South, Sinton, Tarancahuas, Volpe, Rincon, Taft, Guerra, Ricaby and Alta Mesa, Killam, Mexia, Powell, Rowe & Baker, Sulphur Bluff, Wortham, Boggy Creek, Cayuga, Cayuga Trinity, Grapeland, Lone Star, Talco, Rodessa, Trinity, North Novice, Goldsboro, Anzac-Morris, Big Lake, Grayson, World, Church-Fields, Estes, Goldsmith, Gulf-McElroy, Hendricks, Howard-Glasscock, Iatan-East Howard, Keystone (Colby Sand), Keystone (Lime), Lehn, McClintic, Penwell, Sharon Ridge, Snyder, Taylor Link, Waddell, Ella Waddell, North and South Ward, Seminole, Sand Hills (Permian), Sand Hills (Ordovician), Johnson Pool in Cooke County, Rodgers & Rodgers, and all Panhandle fields.

Allowables Slightly Less Strict in September

Continued restriction of crude oil production within market demand is in prospect for September, as the 8 prorated states, accounting for 81 percent of the nation's output, will have combined allowables about 52,213 barrels (1.8 percent) under demand for the oils of those states, as estimated by the Bureau of Mines.

In August those 8 states had slightly stricter allowables, their quotas in the aggregate having been 85,457 barrels (2.9 percent) under indicated demand.

The practical effect of the August allowables was reflected in statistics on crude oil stocks, which stood at 264,297,000 barrels on August 3 and two weeks later about a million barrels higher, at 265,425,000 barrels on August 17. Later figures are not yet available.

While the allowable picture for September was comparatively bright, it was disappointing for those who had expected the state proration authorities to be influenced by evidence presented at the meeting of the Interstate Oil Compact Commission at Oklahoma City August 23. At that meeting it was recommended that production should be held in September to a level 5 percent below consumer demand as estimated by the Bureau of Mines.

That suggestion led to controversy in Oklahoma, and that state extended August allowables 9 days into September and postponed decision on quotas for the remainder of the month.

Details of the allowable situation for September appear in an accompanying table.

Culberson Joins Texas Body With Knowledge of Problems

Olin Culberson, who defeated Pierce Brooks for the office on the Texas Railroad Commission, has had long experience with the work of the commission. Until late in 1939, Culberson was employed by the commission as chief of its Gas Utilities Division, and he conducted numerous hearings and investigations into gas rates in Texas.

Culberson came to the commission in 1932, and was continuously on its staff until he was dismissed last year. During the course of his employment, he had charge of the oil accounting division and was used as a trouble shooter at various times when unusual problems developed which required a firm hand.

OLIN CULBERSON

The new commissioner was invariably strict in his interpretation of the rules, and required exact compliance, furnishing a clue to his probable attitude during the six years he will hold office. His term begins early in January, 1941, and he will replace Commissioner Lon A. Smith, who did not seek reelection.

Because Culberson was originally sponsored by Commissioner Ernest Thompson, and because Commissioner Jerry Sadler joined Commissioner Lon Smith in the order to dismiss Culberson, observers believe that the new commissioner and Thompson are likely to dominate commission policy after the first of the year.

Culberson, however, is a man who thinks for himself, and there is every reason to believe that he will act independently in arriving at decisions the commission must make. He is 54 years old, in excellent health, and should be able to bear his full share of commission burdens.

During his campaign, Culberson announced he would not be a candidate for another office while he is a member of the commission, a practice followed by some of the other commissioners that has been condemned by their opponents in political races.

Culberson was born in Turnersville, Coryell County, Texas, on October 26, 1886. He moved to Hillsboro, where he was educated, and went to work on the railroads there in 1905. In 1911, he was appointed deputy clerk of Hill County. He was married in the following year, and remained in Hillsboro until 1918, when he enlisted in the army and rose to the rank of major.

He was elected county clerk of Hill County in 1920, and county judge in 1924. In 1929 he moved to Edna, Texas, and entered the mercantile business.

He ran against Ernest Thompson for railroad commissioner in 1932, placing third in this race, and then joined the commission in the Gas Utilities Division, where he remained until October, 1939.

Michigan Allowable Hearing Called for September 9

A public hearing has been called by P. J. Hoffmaster, Michigan state supervisor of wells, for September 9 to consider 20-acre spacing for the new Hamilton field, Clare County, a pattern which has been followed on the first six locations in the field; proposals to exempt several shallow pools where only a few isolated wells now are capable of making the 100-barrel maximum state allowable, and a proposal to create allowable units on large producing leases.

Under the present proration program although allowables are on a unit-well basis, the total production for a lease is figured on the lease as a whole. Numerous complaints have been filed with proration authorities that on leases with 10 wells or more, the procedure is to produce one or two good wells to make up the production from other wells that are not capable of making the allowable.

Associations

A.I.M.E. Petroleum Division To Hear Seventeen Papers

Papers covering seventeen subjects of technical and general interest to the petroleum industry are to be presented at the Petroleum Division meeting of the American Institute of Mining & Metallurgical Engineers, scheduled for the Ambassador Hotel, Los Angeles, October 17 and 18. Two technical sessions will be held each day, followed by a banquet on the evening of October 18 at which a nationally known

C. P. WATSON

speaker will discuss a subject of general interest. The speaker and subject will be announced at a later date.

C. P. Watson, vice president of Seaboard Oil Company, as chairman of the program committee, has the program to be presented during the four technical sessions. Attendance is expected to exceed that reported last year when 700 members and visitors participated. R. H. Pence, engineer in the California Oil Administrator's office, is acting as chairman of the publicity committee and program director.

Production Advancements

W. H. Geis will act as presiding chairman at the morning session, October 17, and T. A. Atkinson will act as vice chairman. Five papers will be presented at the morning session, including: "Review of Advancements in California Drilling Practice for 1940," by A. H. Bell, general superintendent for Continental Oil Company; "Drill Pipe Corrosion," by V. V. Mason, Standard Oil Company of California; "New Method of Plotting Slant Holes," by Tracy L. Atherton, engineer for the California State Lands Commission, and sponsored by E. K. Soper, department of geology, University of California, Los Angeles; "New Method for Constructing Subsurface Models," by Kenneth M. Bravinder, Dean Sheldon and Jonathan E. Koogle; "Slim Hole Drilling in Gulf Coast," by Chase Sutton, The Pure Oil Company, Houston.

At the October 17 afternoon session, Joseph Jensen will will act as presiding chairman, and E. G. Trostel as vice chairman. E. W. McAllister, production engineer for Kettleman North Dome Association, will present a paper on "Development and Application of Subsurface Pressure Data in Kettleman Hills." "Operation of the Gas Law in the Montebello Field," will be discussed by E. Huguenin, deputy California Oil and Gas Supervisor, and Harry P. Stolz, consultant to the California Attorney General. "Experiments on Flow of Heterogeneous Fluids Through Consolidated Sand," will be presented by J. A. Putnam, University of California, Berkeley. "Application of Core Analyses to Production Methods," will be discussed by James A. Lewis, Core Laboratories, Dallas.

Natural Gasoline

At the morning session, October 18, H. N. Marsh will act as presiding chairman, and E. K. Soper as vice chairman. Papers to be presented will include: "Phase Behavior in the Methane-Propane-Pentane System," by R. T. Carter, B. H. Sage and W. N. Lacy, California Institute of Technology; "Changes in Natural Gasoline Manufacturing," by Wm. Roper, Western States Gasoline Corporation; "The Volumetric Behavior of Oil and Gas from the Rio Bravo Field," by B. H. Sage and H. H. Reamer, California Institute of Technology, and "Characteristics and Application of an Oil Base Mud," by Horace Hindry, Shell Oil Company.

R. P. McLaughlin will serve as presiding chairman at the October 18 afternoon session, and R. H. Pence as vice chairman. Papers to be presented will include: "Notes on Estimating and Valuing Oil Reserves," by Paul Paine, petroleum engineer, and H. K. Armstrong, geologic engineer; "Functions of a Trade Association," by Rush M. Blodgett, executive vice president, Oil Producers Agency; "The Effect of Curtailment on Local Taxes," by Walker S. Clute, consulting geologist and engineer, and Milton W. Lewis, geologist and engineer.

R. E. Collom, president of the California Oil & Gas Association, will deliver a short address at the conclusion of this session on "The Oil Industry."

Texas Mid-Continent Group To Honor Oil Pioneers

The forty-fifth anniversary of the discovery of Texas' first commercial oil production at Corsicana in October, 1895, will furnish the theme for the 1940 convention of the Texas Mid-Continent Oil and Gas Association, President E. L. Smith announced last week. The meeting will be held October 31 through November 2 at Fort Worth.

Special recognition will be given to oil pioneers who took a leading part in the discovery or development of the Corsicana and other early Texas fields, Smith said. The convention program will emphasize the present place of petroleum in Texas life, with its amazing rise to the state's largest industry in less than 50 years.

An elaborate entertainment program also is being arranged for the meeting. Besides the annual handicap golf tournament for the W. B. Hamilton trophy, there will be a dinner dance and show for the oil men and their wives, and several other social affairs.

Speakers for the meeting to be announced within a few weeks, will include not only prominent oil men, but also leaders in general business and government.

Vice presidents in charge of the association's regional divisions are H. R. Cullen, Houston, Gulf Coast; Bryan W. Payne, Tyler, East Texas; J. L. Collins, Corsicana, East Central Texas; D. Houston Bolin, Wichita Falls, North Texas; M. B. Davis, Pampa, Panhandle; Hamilton McRae, Midland, West Texas; Joe A. Clarke, Albany, West Central Texas, and Al Buchanan, San Antonio, Southwest Texas.

Corporate

McWilliams Heads Producing Unit of Louisiana Standard

Louark Producing Company was organized last week under corporate laws of Delaware as a subsidiary of Standard Oil Company of Louisiana to handle production activities. Headquarters have been established in the Standard Oil Building, Shreveport.

J. R. McWilliams, vice president and general manager of the producing department of Standard Oil Company of Louisiana, heads the new company as president. Other officers are Cecil Morgan, vice president and secretary, and V. C. Megarity, treasurer.

J. R. McWILLIAMS

McWilliams, a 1919 engineering graduate of the University of Michigan, was with Skelly Oil Company for eight years as petroleum engineer, was assistant umpire with the Oklahoma Corporation Commission for six months, was with The Carter Oil Company for two years, and joined Standard Oil Company of Louisiana in 1936.

Inventory Situation Aided By Moderate Operations

The industry continued to produce and refine crude oil in economically desirable quantities, latest statistics showed. Consequently, inventories were affected favorably.

Production of crude oil remained materially short of the indicated current market requirements in the week ended August 24, according to the report of the American Petroleum Institute. Refinery runs were further curtailed 25,000 barrels daily and were at about the same level as a year ago. Production of gasoline was 356,000 barrels greater than in the previous week, but consumption absorbed all the increased plant output plus 671,000 barrels from storage. Stocks of light fuel oil were further expanded a million barrels.

United States crude oil production was estimated at 3,508,000 barrels daily for the week of August 24. That was approximately 150,000 barrels less than indicated daily demand, as estimated by the Bureau of Mines. In the corresponding week last year the nation's output was the lowest since October, 1922, because of the concerted shutdowns of the oil fields of the Mid-Continent states.

Runs to stills were lowered to 3,485,000 barrels daily in the August 24 week, from 3,510,000 the week before. In the comparable week last year the runs averaged 3,472,000 barrels a day.

The withdrawal of less than 700,000 barrels from gasoline stocks was below normal for the season and left 85,770,000 barrels on hand. That was 12,000,000 barrels (16.6 percent) more than the inventory held at the corresponding time last year.

In order to lower the gasoline stocks as far down as 80,000,000 barrels by September 30, end of the heavy consuming season, the industry would have to take out henceforth a million barrels weekly. And even as little as 65,000,000 barrels would be sufficient as working stocks at that time, in the opinion of economists.

The light fuel oil inventory situation was further improved by the million-barrel addition of the August 24 week. Stocks of those oils, which will be used in large quantity for heating during the coming fall and winter, totaled 43,931,000 barrels on August 24. Continued accumulation of a million barrels of storage a week would boost the total to 49,000,000 barrels by September 30.

Stocks of heavy fuel oils rose in the week of August 24 from 107,935,000 to 108,021,000 barrels, but the latter amount was about 7,500,000 barrels smaller than that held at the corresponding time last year.

Crude oil stocks totaled 263,425,000 barrels on August 17, the Bureau of Mines reported, as compared with 262,486,000 barrels at the corresponding time last year.

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1938:						
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,687,000	32,068,000	118,711,000
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
July 29	3,539,100	3,460,000	268,513,000	77,887,000	34,900,000	114,053,000
August 5	[1]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[2]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
September 30	3,658,200	3,560,000	233,023,000	71,168,000	38,081,000	115,466,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[2]229,127,000	72,122,000	39,358,000	115,060,000
October 28	3,498,500	3,520,000	230,453,000	72,660,000	39,562,000	114,786,000
November 25	3,818,100	3,510,000	231,811,000	75,595,000	38,527,000	112,106,000
December 30	3,545,000	3,445,000	237,742,000	80,985,000	34,184,000	106,680,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[1]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 3	3,493,550	3,510,000	264,297,000	89,492,000	40,448,000	106,919,000
August 10	3,475,300	3,435,000	263,607,000	88,115,000	41,377,000	107,601,000
August 17	3,518,750	3,510,000	263,425,000	86,441,000	42,869,000	107,935,000
August 24, 1940	3,508,000	3,485,000	.....	85,770,000	43,931,000	108,021,000
August 24, 1939	[2]1,690,800	[3]3,472,000	[4]262,486,000	73,579,000	37,109,000	115,597,000
Change in past year	[2]+107.5%	+0.4%	+0.4%	+16.6%	+18.4%	—6.6%

[1] All time peak. [2] Peak for year. [3] Lowest since April, 1922. [4] Stocks, August 12, 1939.
[5] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] August, 1939, daily average. [9] Mid-Continent production partially shut in by State orders in latter half of August, 1939.

Crude Oil Prices Revised; Product Prices Steady

The industry's markets have continued to undergo significant changes, further revisions having been made in prices of crude oil, while natural gasoline has moved into the limelight through seasonally improved demand that has forced long-depressed prices upward.

While purchasers of Pennsylvania-grade crude have further reduced their postings for that oil 15 cents a barrel, buyers of Michigan crudes have bid their prices upward 10 cents, following a similar advance in Illinois-Indiana-Kentucky postings.

Pennsylvania Crude Cut

The 15 cents a barrel cut in all Pennsylvania-grade crude prices effective August 28 was the fourth general reduction within three months, all four having aggregated 90 cents. The downward movement began with a 25-cent cut May 22 and was continued with 25-cent reductions June 18 and July 12.

Bradford-Allegany crude now is $1.85 a barrel, compared with $2.75 prior to May 22. Pennsylvania-grade in National Transit lines is posted by Pennzoil Company at $1.73 to $1.78, depending on the distance of wells from the company's refinery.

Southwestern Pennsylvania crude now is $1.50 a barrel. Eureka, West Virginia, oil is $1.44.

Pennsylvania-grade crude in southeastern Ohio is posted now at $1.55 a barrel.

The additional reduction in Pennsylvania-grade prices resulted from continued relatively low prices for lubricating oils. Lubricant prices declined steadily after the beginning of this year, after having risen precipitously in the closing months of last year, the relapse having reflected less favorable trends of exports and the early 1940 recession of industrial activity in the United States.

Prices of Pennsylvania-grade now are back at the low levels that were reached in late 1938 and early 1939 after the decline that followed the 1937 boom, the four reductions of this year having canceled the half-dozen increases of last year.

Michigan Crude Raises

A 10-cent advance for Michigan basin grades of crude oil was posted, effective August 24, by leading purchasers in the area. That was the first change in basin prices since October, 1939, and pushed the top price in the region to $1.12 a barrel.

By August 28 the 10-cent advance that had been initiated in the basin had swept to all but one major producing district of Michigan, and all leading purchasers had posted equal advances. The area excepted was Bloomingdale - Columbia, Van Buren County, where no change was made from the old $1.08 posting.

In the basin fields the 10-cent increases placed prices as follows: Midland-Porter-Greendale, $1.12 a barrel; Sherman, Freeman - Redding, $1.07;

Wise-Vernon, Saginaw, and Crystal, $1.12; Buckeye-Bentley and Edenville, $1.10.

The 10-cent advance was general for basin crudes with exception of three "black crude" areas, representing a total of 4500 barrels daily production. Adams grade was advanced from 90 to 95 cents a barrel; West Branch grade from 87 to 92 cents, Clare from 76 to 81 cents, and Clayton grade from 82 to 92 cents.

All shallow Traverse grade crudes except Van Buren, but including Kent, Ottawa, and Allegan oil, moved from $1.08 to $1.18, the highest posting in Michigan since July, 1938.

Over 92 percent of Michigan's total daily output is now posted at $1 or more per barrel.

Natural Gasoline Up

Better demand resulted in advances of ¼ cent a gallon in prices of natural gasoline, sales having been made at 1¾ cents at Mid-Continent plants, f.o.b. Group 3, and at 1½ cents f.o.b. Breckenridge, Texas.

Few important changes were made during the past week in prices of refined products, although there were some further reductions along the northern Atlantic seaboard, affecting gasoline and fuel oils, as tanker rates remained low, while supplies were comparatively free on the Gulf Coast.

Also, Socony-Vacuum Oil Company, effective August 28, reduced prices of gasoline at bulk plants throughout New York and New England 1/10 to 1-3/10 cents a gallon, with areas of subnormal prices exempted.

In the Middle West, demand for gasoline continued brisk and prices were well maintained, and prices at Mid-Continent refineries were unchanged.

Prices of other products also were maintained at Mid-Continent plants with exception of lubricants, which were lowered ½ to 1 cent a gallon by some plant owners. Kerosene and fuel oils were relatively firm.

Product prices in Pennsylvania were mostly unchanged, in the face of the reduction of crude postings. Refiners said that product prices already had declined previously to levels in line with the new postings for crude.

Wholesale Prices of Refined Products

	Range Late Last Week (Cents a gal.)		Changes from week Before	
REFINED GASOLINE				
Oklahoma Refineries:				
60 Octane and under	3⅞	4¼	...	...
63-66 Octane	4¼	4⅜	...	...
72-74 Octane	4⅝	5¼	...	...
Mid-Western Tank Car:				
60 Octane and under	3⅞	4¼	...	...
63-66 Octane	4¼	4⅜	...	...
72-74 Octane	4⅝	5¼	...	...
New York Harbor:				
70 Octane and under	5½	5¾	...	—¼
72-74 Octane	5¼	6½	—¼	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	1¾	1¾	+¼	+¼
F.O.B. Breckenridge, Texas	1½	1½	+¼	+¼
KEROSENE				
Oklahoma Refineries:				
41-43 water white	3⅞	4¼	...	...
42-44 water white	4	4⅝	...	...
Mid-Western Tank Car:				
41-43 water white	3⅞	4¼	...	...
42-44 water white	4	4⅝	...	...
New York Harbor	4¾	4¾	...	...
RANGE OIL				
At Oklahoma Refineries	3½	3⅞	...	...
In Mid-Western Market, Group 3 basis	3½	3⅞	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3¼	3½	...	...
No. 3	3½	3⅝	...	...
Mid-Western Tank Car:				
No. 1 white	3¾	3¾	...	...
No. 3	3½	3⅝	...	...
New York Harbor:				
No. 1	4¾	4¾	...	...
No. 3	4½	4½	...	...

	Range Late Last Week (Per Bbl.)		Changes from week Before	
HEAVY FUEL OILS				
Oklahoma Refineries:				
No. 6	$0.55	$0.55	...	...
Mid-Western Tank Car:				
No. 5	.75	.75	...	...
No. 6	.50	.55	...	...
New York Harbor:				
No. 5	1.45	1.70	...	...
No. 6	1.15	1.25	...	...
BUNKER C FUEL OIL (Per barrel, ships bunkers)				
Gulf Coast	$ .80	$ .90	...	...
New York Harbor	1.15	1.25	...	...
DIESEL OIL (Per barrel, ships bunkers)				
Gulf Coast	$1.50	$1.70	...	...
New York Harbor	1.70	1.70	...	...
Los Angeles Basin, 27 gravity	1.20	1.40	...	...
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210°, 10-25 pour test	13	15½	—½	...
Neutral oil, pale No. 3 color, 150 viscosity at 100°, 0-10 pour test	8	10¼	...	...
Western Pennsylvania:				
Bright stock, 145-166 viscosity, at 210°, 25 pour test	12	13	...	...
Neutral Oil No. 3 color, 150 viscosity at 70°, 25 pour test	19	19	...	...

United States Crude Oil Production Down 20,350 Barrels

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand in August	State Allowable in August	BARRELS DAILY FOR WEEK ENDED August 24	August 31
TEXAS—				
Texas Panhandle	.....	.....	67,675	65,125
North Texas	.....	.....	93,125	94,950
West Central Texas	.....	.....	28,550	28,750
West Texas	.....	.....	194,950	195,550
East Central Texas	.....	.....	71,275	72,050
East Texas Field	.....	.....	374,900	374,850
South Texas	.....	.....	181,100	182,950
Texas Gulf Coast	.....	.....	187,475	189,425
Total Texas	1,326,400	1,194,943*	1,199,050	1,203,650
CALIFORNIA—				
Long Beach	.....	.....	42,500	41,500
Midway-Sunset	.....	.....	43,000	40,200
Kettleman Hills	.....	.....	47,200	47,300
Wilmington	.....	.....	85,300	85,100
Others	.....	.....	398,000	378,500
Total California	598,400	587,000†	616,300	592,600
OKLAHOMA—				
Oklahoma City	.....	.....	97,600	104,900
Seminole Area	.....	.....	102,000	107,200
Others	.....	.....	207,700	202,900
Total Oklahoma	402,600	390,000	407,300	415,000
ILLINOIS—				
Salem	.....	.....	166,500	162,100
Louden	.....	.....	76,200	76,500
Centralia	.....	.....	31,300	30,100
Other New Pools	.....	.....	96,800	95,000
Old Pools	.....	.....	10,500	10,700
Total Illinois	440,600	.....	381,300	374,400

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand in August	State Allowable in August	BARRELS DAILY FOR WEEK ENDED August 24	August 31
LOUISIANA—				
North Louisiana	.....	59,857	65,100	64,550
South Louisiana	.....	214,763	208,650	210,275
Total Louisiana	276,100	274,620	273,750	274,825
KANSAS	166,800	170,607	181,800	176,900
NEW MEXICO	105,200	102,000	102,050	100,950
EASTERN STATES—				
Pennsylvania Grade	57,000	.....	70,700	70,550
Others, Eastern	35,900	.....	19,800	19,900
Total Eastern States	92,900	.....	90,500	90,450
MOUNTAIN STATES—				
Wyoming	81,300	.....	73,500	74,500
Montana	20,600	.....	18,200	17,400
Colorado	4,200	.....	3,600	3,500
Total Mountain States	106,100	.....	95,300	95,400
MICHIGAN	57,100	52,000§	54,200	53,500
ARKANSAS	65,200	73,000	73,925	74,500
INDIANA	10,000	.....	14,500	14,950
MISSISSIPPI	10,300	.....	20,250	22,500
NEBRASKA	.....	.....	300	350
‡Total 8 Prorated States	2,997,800	2,844,170	2,908,175	2,891,925
Total United States	3,657,700	.....	3,510,325	3,489,975

* Net daily average for 31 days as of August 1, considering general shutdowns on August 1, 4, 8, 11, 15, 22, 25, and 30.
† Recommendation of Central Committee of California Oil Producers.
§ Department of Conservation estimate of actual production.
‡ Texas, California, Oklahoma, Louisiana, Kansas, Arkansas, Michigan, New Mexico.

CRUDE OIL PRICE SCHEDULES

MID-CONTINENT GRAVITY SCALE PRICES—Posted October 11-13, 1938

(Some fields of Mid-Continent have flat price postings, and are shown separately)

Gravity	[7]Okla.-Kans.	[10]North La.-Ark.	[9]Schuler, Ark. 9-13-39	North & W. Central Tex.	East Central Tex.	Gray Co. Tex.	Carson, Hutchinson Co. Tex.	[1]Tomball, Tex. Type	West Tex.-New Mex.	[2]Gulf Coast (Tex.-La.) 10-2-39	[3]Some La. Gulf Areas 10-2-39	Jennings, La.	[4]Anahuac, Tex. Type 10-2-39	[5]Refugio, Tex. Type 10-2-39	[6]Mirando, Tex. Type 10-2-39	[8]Salt Creek, Wyo. (except Tensleep)
19–19.9	.....	.....	.....	.....	.....	.....	.....	.....	*$0.53	*$0.86	*$0.86	.....	*$0.81	*$0.91	*$0.86	.....
20–20.9	$0.60	.....	.....	.....	.....	.....	.....	.....	.55	.88	.88	.....	.83	.93	.88	$0.70
21–21.9	.63	.....	.....	.....	.....	.....	.....	.....	.57	.90	.90	.....	.85	.95	.90	.72
22–22.9	.66	.....	.....	.....	.....	.....	.....	*$0.95	.59	.92	.92	.....	.87	.97	.92	.74
23–23.9	.69	.....	.....	.....	*$0.78	.....	.....	.97	.61	.94	.94	.....	.89	.99	.94	.76
24–24.9	.72	*$0.73	*$0.63	*$0.71	.80	.....	.....	.99	.63	.96	.96	.....	.91	1.01	.96	.78
25–25.9	.75	.75	.65	.73	.82	.....	.....	1.01	.65	.98	.98	.....	.93	1.03	.98	.80
26–26.9	.78	.77	.67	.75	.84	.....	.....	1.03	.67	1.00	1.00	.....	.95	1.05	1.00	.82
27–27.9	.81	.79	.69	.77	.86	.....	.....	1.05	.69	1.02	1.02	.....	.97	1.07	1.02	.84
28–28.9	.84	.81	.71	.79	.88	*$0.72	*$0.67	1.07	.71	1.04	1.04	.....	.99	1.09	1.04	.86
29–29.9	.87	.83	.73	.81	.90	.74	.69	1.09	.73	1.06	1.06	.....	1.01	1.11	1.06	.88
30–30.9	.90	.85	.75	.83	.92	.76	.71	1.11	.75	1.08	1.08	.....	1.03	1.13	1.08	.90
31–31.9	.92	.87	.77	.85	.94	.78	.73	1.13	.77	1.10	1.10	*$0.87	1.05	1.15	1.10	.92
32–32.9	.94	.89	.79	.87	.96	.80	.75	1.15	.79	1.12	1.12	.89	1.07	1.17	1.12	.94
33–33.9	.96	.91	.81	.89	.98	.82	.77	1.17	.81	1.14	1.14	.91	1.09	1.19	1.14	.96
34–34.9	.98	.93	.83	.91	1.00	.84	.79	1.19	.83	1.16	†1.16	.93	1.11	1.21	1.16	.98
35–35.9	1.00	.95	.85	.93	1.02	.86	.81	1.21	.85	1.18	.....	.95	1.13	1.23	1.18	1.00
36–36.9	1.02	.97	.87	.95	1.04	.88	.83	1.23	.87	1.20	.....	.97	1.15	1.25	1.20	1.02
37–37.9	1.04	.99	.89	.97	1.06	.90	.85	1.25	.89	1.22	.....	.99	1.17	1.27	1.22	1.04
38–38.9	1.06	1.01	.91	.99	1.08	.92	.87	1.27	.91	1.24	.....	1.01	1.19	1.29	1.24	1.06
39–39.9	1.08	1.03	.93	1.01	1.10	.94	.89	1.29	.93	1.26	.....	1.03	1.21	1.31	1.26	1.08
40+	1.10	1.05	.95	1.03	1.12	.96	.91	1.31	.95	1.28	.....	1.05	1.23	1.33	1.28	1.10

* Minimum price and applies also to purchases of lower gravity.

† Maximum price and applies also to purchases of higher gravity.

[1] Tomball, Raccoon Bend (Deep) and Satsuma.

[2] Includes Amelia, Barbers Hill, Big Creek, Blue Ridge, Clear Lake, Cotton Lake, Esperson, Fannett, Goose Creek, Hankamer, Lovells Lake, Lochridge, Moore, Mykawa, Nome, Orange, South Liberty, Spindle Top, Sugar Land, Thompsons, Webster, and West Beaumont.

[3] Includes Berwick Bay, Bay St. Elaine, Caillou Island, Chacahoula, Dog Lake, Edgerly, Four Isle, Gillis, Grand Bay, Hackberry, Horseshoe Bayou, Iberia, Jefferson Island, Lake Barre, Lake Pelto, Leesville, Port Barre, Starks, Timballer Bay, Quarantine Bay, and Vinton fields.

[4] Anahuac, Dickinson, Gillock, Cedar Point, Fairbanks, Turtle Bay, Hull, Orange, Pierce Junction, Batson, Caplen, Humble, North Dayton, Saratoga, Sour Lake, South Esperson, Spindle Top, West Orange, Thompson (deep), and Raccoon Bend (shallow) fields.

[5] Includes Saxet, E. White Point, Greta, O'Connor McFadden, Taft, Plymouth and Tom O'Connor fields.

[6] Includes Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields.

[7] Oklahoma Pipe Line and Magnolia schedules.

[8] Includes La Barge, Midway Dome, Dutton.

[9] Also Buckner, Village, Magnolia.

[10] Add 10 cents for Bunkie and Eola field prices.

Mid-Continent Flat Prices

	Flat Price	Date Posted
Arkansas:		
Smackover	$0.73	10–12–38
Louisiana:		
Garden Island	1.24	10–12–38
Gibson	1.04	10–11–38
Lafitte	1.04	10–12–38
Texas:		
Cayuga	.78	10– 2–39
East Texas	1.10	10–12–38
Talco	.65	10– 2–39
Livingston, Cleveland	1.10	10–12–38
Van	.93	10–12–38
Pettus	1.29	10–12–38
Pecos County	.78	10–12–38
Pecos Shallow	.65	10–12–38
Luling	.87	10–12–38
Lytton Springs	.99	10–12–38
Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski	.96	10–11–38
Flour Bluff-Jim Wells Co.	1.23	10–11–38
Guerra	1.06½	5– 8–39
Seabreeze, Willow Slough, La Belle, Hardin, S. China	1.10	9–14–39
Clay Creek	.85	10–13–38
Conroe	1.27	10–11–38
Long Lake	1.08	10–19–38

Middle West Prices

Lima, Ohio	$0.90	10–13–38
Illinois, old fields	1.00	8–23–40
Illinois Basin	1.15	8–21–40
Lake Centralia-Salem, Illinois	1.15	8–21–40
Princeton, Indiana	1.00	8–23–40
Sw. Ind.-Se. Ill.: N. Griffin, S. Griffin, Phillipstown, New Harmony, Storms, Iron	1.15	8–21–40
Western Kentucky	1.05	8–21–40
Birk City, Western Kentucky	1.05	8–21–40
Kentucky River, Eastern Ky.	1.20	8–21–40
Big Sandy River, Eastern Ky.	1.12	8–21–40

Michigan Prices

	Flat Price	Date Posted
Central (Basin):		
Porter, Greendale, Crystal, Wise, Midland, Vernon	$1.12	8–24–40
Buckeye, Edenville, Bentley, Beaverton	1.10	8–24–40
Freeman, Sherman, Redding	1.07	8–24–40
Arenac, Ogemaw, W. Branch	.92	8–24–40
Southwest (Shallow):		
Allegan, Kent Counties	1.18	8–24–40
Van Buren Co., Bloomingdale	1.08	5– 1–40
Adams	.95	8–24–40
Clare	.81	8–24–40

Rocky Mountain States Prices

Colorado:		
Canon City, Ft. Collins, Wellington, Moffat and Florence	$0.90	10–11–38
Iles, Light	.98	10–11–38
Iles, Heavy	.92	10–11–38
Montana:		
Cat Creek	1.10	10–11–38
Cut Bank	1.00	1– 1–40
Sunburst	.80	1– 1–40
New Mexico:		
Artesia	.77	10–11–38
Hogback	1.00	10–11–38
Wyoming:		
Big Muddy	.98	10–11–38
Byron	.55	10–11–38
Dry Creek	.92	10–11–38
Elk Basin	.90	10–11–38
Frannie, Light	.55	10–11–38
Frannie, Heavy	.42	10–11–38
Garland	.50	10–11–38
Grass Creek, Light	.90	10–11–38
Grass Creek, Heavy	.40	10–11–38
Hamilton Dome	.35	10–11–38
Lance Creek	.77	10–11–38
Mill Creek	.72	10–11–38
Oregon Basin	.40	4–20–40
Osage	1.30	10–11–38
Poison Spider	.59	10–11–38
Rock Creek	1.00	10–11–38
Tensleep	.646	10–11–38

Eastern States Prices

	Flat Price	Date Posted
Bradford-Allegany	$1.85	8–28–40
Sw. Pa. Pipe Line	1.50	8–28–40
Eureka Pipe Line, W. Va.	1.44	8–28–40
Corning Grade, Ohio	1.12	11– 4–39
Buckeye Crude, Ohio	1.55	7–12–40

Major Price Changes

	Penna. Grade	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
Aug. 11, 1933	Up 10	.....	.....
Aug. 24, 1933	.....	Up 10	.....
Aug. 30, 1933	Up 15	.....	.....
Sept. 6, 1933	Up 10	Up 10	Up 15
Sept. 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
Nov. 6, 1934	Cut 25	.....	.....
Dec. 6, 1934	Cut 25	.....	.....
Jan. 4, 1935	Up 15	.....	.....
Feb. 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
Aug. 29, 1935	.....	.....	Cut *1
Sept. 6, 1935	Up 5	.....	.....
Oct. 29, 1935	Up 15	.....	.....
Nov. 1, 1935	.....	.....	Up *28
Nov. 18, 1935	Up 15	.....	.....
Dec. 6, 1935	.....	.....	Up *9
Jan. 9, 1936	.....	Up 10	.....
Jan. 13, 1936	Up 15	.....	.....
Mar. 7, 1936	.....	.....	Up *18
Dec. 28, 1936	Up 12	.....	.....
Jan. 28, 1937	.....	Up 12	.....
Feb. 24, 1937	Up 10	.....	.....
June 7, 1937	Up 15	.....	.....
Sept. 1, 1937	Cut 22	.....	.....
Oct. 12, 1937	Cut 25	.....	.....
Dec. 1, 1937	Cut 15	.....	.....
Mar. 7, 1938	Cut 17	.....	.....
June 13, 1938	Cut 25	.....	.....
Sept. 1, 1938	Cut 12	.....	.....
Oct. 11, 1938	.....	Cut 20	.....
Jan. 21, 1939	Up 12	.....	.....
Feb. 2, 1939	Up 8	.....	.....
Mar. 6, 1939	Up 12	.....	.....
Oct. 6, 1939	Up 25	.....	.....
Nov. 1, 1939	Up 15	.....	.....
Dec. 1, 1939	Up 10	.....	.....
Jan. 1, 1940	Up 25	.....	.....
Feb. 1, 1940	.....	.....	Cut *7
May 22, 1940	Cut 25	.....	.....
June 18, 1940	Cut 25	.....	.....
July 12, 1940	Cut 25	.....	.....
Aug. 28, 1940	Cut 15	.....	.....

* Signal Hill 26 gravity.

Crude Production Taxes

In all states other than Texas, levies are severance taxes, collected in lieu of all other taxes, with exception of small special assessments made in Louisiana and Oklahoma, as shown below.

In Texas, any political subdivision as well as the state has power to tax, and state itself levies special taxes in addition to gross production tax, as shown below.

Arkansas—2.6 percent of gross market value.

California—.66443 mills per barrel of oil produced and 17.39 cents an acre on proved lands.

Louisiana—From 4 to 11 cents a barrel, depending upon gravity, average being 7½ to 8 cents; in addition, special taxes may be levied on well equipment, bringing total tax to average around 8¾ cents a barrel.

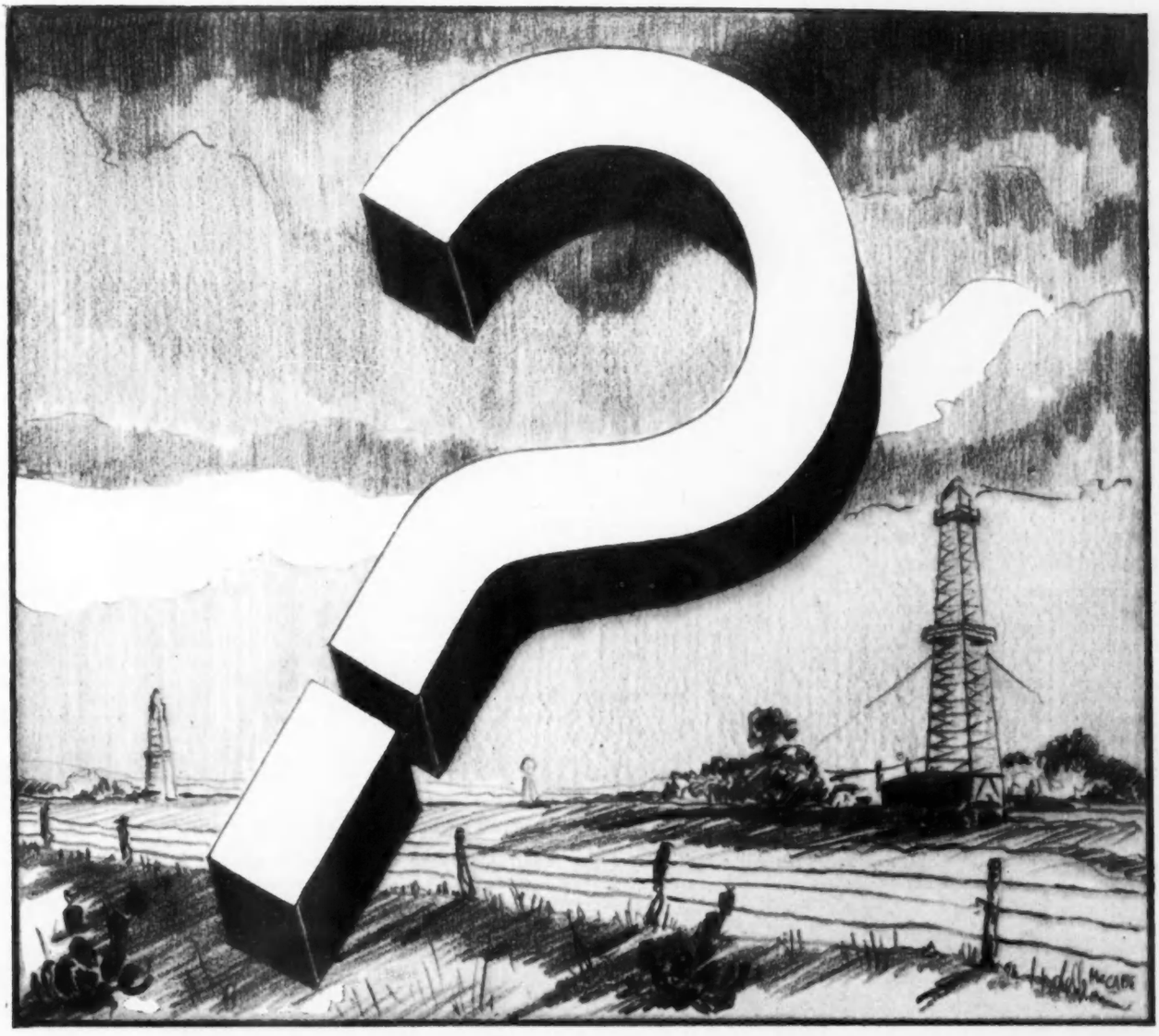
Montana—Two percent of gross value at well and ⅝ of 1c per barrel.

New Mexico—Severance tax of 2 percent on oil and gas.

Oklahoma—Five percent of gross value less royalty interests; in addition, surplus warehouse stocks may be taxed by counties.

Texas—Gross production tax is 2¾ cents a barrel or 2¾ percent, whichever is higher, and averaged 2.94 cents in 1939. In that year, total tax on average barrel produced was, however, 9.23 cents, having included following levies: gross receipts 0.14 cents, regulatory 0.19 cents, state ad valorem 0.98 cents, other state taxes 0.62 cents, and local ad valorem 4.30 cents.

Wyoming—Production tax based upon state and county assessments.



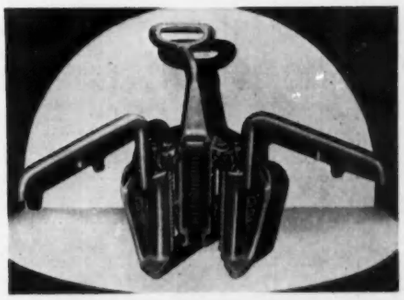
HOW MUCH DOES DAMAGED PIPE COST YOU?

DEEP DRILLING compels special attention be given this question. Damaged pipe has always caused concern, not only because of money loss but because of drilling troubles and expensive fishing jobs.

Mission Slips protect the pipe because: 1. They have a gripping area adequate to properly support the longest strings of pipe for which they are designed. 2. The teeth are small and non-continuous to prevent undue stress concentration and corrosion fatigue. Pipe handled with Mission Slips is less subject to rust as the small teeth minimize damage to protective mill scale. 3. The "Rolling Dogs" cushion the gripping force of the teeth and the comparatively soft alloy steel back plates "give" slightly to compensate for irregularities in the pipe.

Another way careful operators avoid the risk of damage to costly drill pipe is to make sure that slip dogs are factory reconditioned in the Mission plant. Here, precision machinery, expensive jigs, scientific heat-treating, the finest gauges for proper inspection —combine to recondition Mission Slip Dogs so well that they carry Mission's guarantee of service equal to new dogs.

The world leadership of Mission Slips is the result of the revolutionary principle of "Rolling Dogs" which protect the pipe, plus years of field use, plus continuous improvement.



Mission *Rolling Dog* Rotary Slips
One-Piece Type

MISSION
MANUFACTURING CO.
HUMBLE ROAD, HOUSTON, TEXAS
EXPORT OFFICE: 30 ROCKEFELLER PLAZA, NEW YORK

Pipe Lines

Start Work on 45-Mile West Texas Gas Line

Lone Star Gasoline Company, Dallas, has started construction on a 45-mile 8-inch pipe line, authorized last February to transport natural gas from the Page pool, Schleicher County, to the West Texas Utilities Company's electric power plant at San Angelo, Texas. The former is using its own welding crews, with Luther Tolbert, Dallas, assistant superintendent, in charge.

The gas will be supplied by Cooper Gas Company, owner of 4 wells in the 5500-foot Basal Strawn pay with a combined potential of 170,000,000 feet of sweet gas. The power plant is currently using treated gas from the Big Lake field.

Contract Let for West Texas Crude Oil Pipe Line

Construction work on The Texas New Mexico Pipe Line Company's pipe line outlet for the Duggan and Slaughter fields, northernmost oil areas in West Texas, to Midland will be started about September 20. The Latex Construction Company, Houston, was awarded contract to lay the carrier, which will consist of 4 miles of 14-inch, 82½ miles of 8⅝-inch and 19 miles of 10¾-inch welded pipe. The project is scheduled to be completed by December 15, and will have a capacity of 8000 barrels daily, using gravity flow. Survey of right-of-way was made last May.

The line will handle controlled production held by Atlantic Refining Company, Gulf Oil Corporation and Magnolia Petroleum Company from the Duggan-Slaughter district to Midland, where each of the former have affiliated tank farms and trunk line outlets. The Texas Company, largest producer, will also deliver its production to Midland, having arranged to swap it for an equal volume daily of Crane-Upton district crude.

No field gathering system will be installed for the time being in the Duggan-Slaughter district, as arrangements have been made for this service to be performed by South Plains Pipe Line Company at 5 cents per barrel. The latter has served a refinery at Levelland, Texas, the past year and will continue to fill its crude requirements.

Wyoming 14-Mile Line

General Petroleum Corporation, operating in the Cole Creek field of Natrona County, Central Wyoming, has completed plans for laying a $60,000 14-mile pipe line from the field to Socony-Vacuum Oil Company's White Eagle refinery south of the field. Six-inch pipe probably will be used.

Short Arkansas Line

McAlester Fuel Company, McAlester, Oklahoma, has authorized the construction of 14 miles of 4-inch welded line to extend from the Dorcheat pool, Columbia County, Arkansas, to Magnolia station on Standard Oil Company of Louisiana's trunk line. The proposed unit will handle 1200 barrels of distillate produced daily by six wells currently dependent upon tank trucks in reaching markets.

Mississippi Producer Acquires Storage

Union Producing Company, largest producer in the Tinsley field, Mississippi, has leased five 80,000-barrel and two 55,000-barrel steel tanks at the Pan-American Refining Company's terminal at Destrehan, Louisiana, to be used in storing approximately 500,000 barrels of Tinsley crude. Stocks will be accumulated by increasing production above the 100-barrel per well daily quota purchased currently by Standard Oil Company of Louisiana.

Dismantle Shreveport Plant

The Texas Company plans to dismantle its 7000-barrel daily capacity crude topping plant at Shreveport. The unit has been idle the past month.

Tide Water Associated Denies Negotiations

Tide Water Associated Oil Company last week denied that it has been carrying on negotiations with the Mexican government for the sale or purchase of petroleum products. The denial came following newspaper statements that such negotiations were in progress.

CALIFORNIA CRUDE OIL PRICES

Posted effective February 1, 1940. All gravities above those quoted take highest price offered in that field.

Gravity	Wilmington	Signal Hill (Long Beach) El Segundo	Seal Beach	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea, Canon	Athens-Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier, East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Newhall, McKittrick, Kern River, Round Mt., Kern Front	Greeley Canal	Coles Levee, Richfield Western	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Ketleman Hills
14-14.9	$0.60	$0.65	$0.64	$0.63	$0.64	$0.65	$0.61	....	....	$0.65	$0.61	$0.61	$0.62	$0.63	....	$0.60	....	....	....	$0.60	$0.60	$0.60	....	....
15-15.9	.60	.65	.64	.63	.64	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
16-16.9	.60	.65	.64	.63	.64	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
17-17.9	.62	.65	.64	.63	.68	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
18-18.9	.64	.65	.64	.63	.71	.65	.65	....	....	.68	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
19-19.9	.69	.69	.64	.67	.75	.70	.69	....	....	.72	.61	.65	.62	.63	....	.60	....	....	$0.60	.64	.64	.61	$0.60	....
20-20.9	.73	.73	.64	.72	.79	.76	.74	....	....	.75	.65	.69	.62	.67	....	....	....	....	.60	.69	.69	.62	.60	....
21-21.9	.78	.78	.64	.76	.82	.81	.78	....	....	.79	.69	.73	.62	.72	$0.63	....	....	....	.64	.74	.74	.66	.60	....
22-22.9	.82	.82	.69	.81	.86	.86	.82	....	....	.82	.73	.77	.66	.76	.63	....	....	....	.68	.79	.78	.70	.63	....
23-23.9	.86	.86	.75	.85	.89	.92	.86	$0.71	....	.86	.78	.82	.71	.81	.67	....	....	....	.71	.84	.82	.74	.67	....
24-24.9	.90	.90	.80	.90	.93	.97	.90	.77	....	.89	.82	.86	.75	.85	.72	....	....	....	.75	.89	.86	.78	.71	....
25-25.9	.95	.95	.86	.94	.96	1.02	.95	.82	....	.93	.86	.90	.80	.89	.77	....	....	....	.79	.94	.90	.82	.75	....
26-26.9	.99	.99	.91	.99	1.00	1.08	.99	.88	....	.96	.90	.94	.84	.94	.82	....	....	....	.83	.99	.95	....	....	....
27-27.9	1.03	1.03	.97	1.03	1.04	F.O.B.	1.03	.94	....	1.00	.94	.98	.89	.98	.87	....	$0.83	$0.92	.87	1.04	.99	....	....	....
28-28.9	1.07	1.07	1.02	1.07	1.07	Pipe Line	1.07	.99	....	1.03	.98	....	.93	1.02	.91	....	.86	.96	.91	1.09	1.03	....	....	....
29-29.9	1.10	1.10	1.07	1.11	1.10	....	1.10	1.04		1.06	1.02	....	.98	1.06	.96	....	.90	.99	.95	1.14	1.07	....	....	....
30-30.9	1.14	1.14	1.12	1.15	1.14	....	1.14	1.09	F.O.B.	1.09	....	....	1.02	1.10	1.01	....	.94	1.02	.99	1.19	1.11	....	....	....
31-31.9	....	....	....	....	1.17	....	1.17	1.14	Ship	....	....	....	1.07	1.14	1.05	....	.98	1.06	1.02	1.24	....	....	....	....
32-32.9	....	....	....	....	1.20	....	1.20	1.19		....	....	....	1.11	1.18	1.09	....	1.02	1.09	1.06	1.29	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.24	$1.21	....	....	....	1.15	1.22	1.14	....	1.06	1.13	1.10	1.34	....	....	....	$1.12
34-34.9	....	....	....	....	....	....	....	1.29	1.25	....	....	....	1.20	1.26	1.19	....	1.10	1.16	1.14	....	....	....	....	1.17
35-35.9	....	....	....	....	....	....	....	1.34	1.29	....	....	....	1.24	....	1.23	....	1.14	1.20	....	....	....	....	....	1.21
36-36.9	....	....	....	....	....	....	....	1.39	1.33	....	....	....	1.28	....	1.27	....	1.18	1.23	....	....	....	....	....	1.25
37-37.9	....	....	....	....	....	....	....	1.44	1.37	....	....	....	1.33	....	1.31	....	1.22	1.26	....	....	....	....	....	1.29
38-38.9	....	....	....	....	....	....	....	1.49	....	....	....	....	1.37	....	1.36	....	1.25	1.30	....	....	....	....	....	1.33
39-39.9	....	....	....	....	....	....	....	1.54	....	....	....	....	1.42	....	....	....	1.29	1.34	....	....	....	....	....	1.38
40-40.9	....	....	....	....	....	....	....	1.59	....	....	....	....	1.46	....	....	....	1.33	1.37	....	....	....	....	....	....
41-41.9	....	....	....	....	....	....	....	....	....	....	....	....	1.50	....	....	....	1.37	1.40	....	....	....	....	....	....
42-42.9	....	....	....	....	....	....	....	....	....	....	....	....	1.54	....	....	....	1.41	1.44	....	....	....	....	....	....
43-43.9	....	....	....	....	....	....	....	....	....	....	....	....	1.59	....	....	....	1.45	1.47	....	....	....	....	....	....
44-44.9	....	....	....	....	....	....	....	....	....	....	....	....	1.63	....	....	....	1.49	1.51	....	....	....	....	....	....
45-45.9	....	....	....	....	....	....	....	....	....	....	....	....	1.67	....	....	....	1.53	1.54	....	....	....	....	....	....
46-46.9	....	....	....	....	....	....	....	....	....	....	....	....	1.71	....	....	....	1.57	1.57	....	....	....	....	....	....
47-47.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.61	....	....	....	....	....	....	....
48-48.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.64	....	....	....	....	....	....	....

WORLD-WIDE DEVELOPMENTS

By WM. V. GROSS, Associate Editor

Mexico

Deny Appraisal Claim; Want Expropriated Properties Back

Following the Mexican government's appraisal of expropriated foreign-controlled oil companies' properties at $36,258,000 a week ago, which that government inferred was arrived at by an appraisal engineer representing the companies' interests, Standard Oil Company of New Jersey issued a statement declaring the appraiser did not represent the companies, and that he was appointed by the Mexican government.

"This so-called representative of the companies was not nominated by them, does not represent their interests and is in no way authorized to speak for them," the statement said. "He was chosen by the Mexican government and speaks for that government.

"In 1928, the Mexican Department of Industry placed a value on Mexico's foreign-owned oil industry at 1,038,943,000 pesos, or about $499,492,000 at the then rate of exchange. The value now placed on these properties by the Cardenas government—about $36,000,000—represents such a small fraction of the above estimate made by Mexican government officials that it prompts inquiry into what the basis for such a drastic discrepancy may be."

The statement of the American company, which is the parent company of Huasteca Petroleum Company, second largest of those which were expropriated, then explained:

"An answer may be found in the fact that when President Cardenas seized the oil properties on March 18, 1938, he made it plain that Mexico would pay nothing for the great bulk of the properties, namely, the right of the companies exclusively to produce the subsoil petroleum. The oil in the subsoil constitutes the major portion of the value of any oil-bearing properties. It is obvious that the reason Mexico seized the properties in question was so as to possess itself of this oil.

Maintain Action Illegal

"It is the companies' position," the statement continued, "that the Cardenas government's confiscation of this right (to exploit and develop oil in the companies' properties) is illegal, unconstitutional and in violation of the accepted practice of international law and of specific pledges made by the Mexican government to the government of the United States. This is irrespective of any arbitrary valuation which the Mexican government may put upon the surface properties and installations.

"Any new promises to pay even a few cents on the dollar of the recognized worth of the properties are as illusory as they are misleading," the statement declared. "To accept them as fulfilling the conditions of an expropriation would be to accept in fact the confiscation of the major portion of the properties.

"Under the circumstances the only feasible solution is to return the properties to the management of the rightful owners, possibly along the broad lines of the compromise put forward by the companies in their proposal of January 26, 1939."

In connection with the $36,000,000 appraisal, arrived at through reports submitted to the First Civil District Court in Mexico City recently, belief was expressed in Mexican government circles of the nation's ability to pay off that sum in 10 years.

The estimate of roughly $36,000,000 does not mean that the companies would collect that amount, even in 10 years, if they were to agree to the Mexican government's appraisal. There is an item of 117,000,000 pesos yet to be deducted, representing the Petroleum Workers Syndicate's claim against the companies for severance pay and other items, a claim generally conceded to be recognized by the government and labor boards. Hence, the oil companies actually would receive somewhere between $11,000,000 and $13,000,000 for properties variously appraised at from $400,000,000 to $450,000,000.

Mexico's Ministry of Economy is reported to have valued the properties at $400,000,000 in 1930. A special commission appointed shortly before expropriation to determine the companies' ability to meet demands for increased wages estimated their yearly profit at more than $15,000,000. If the value of the companies were calculated on the basis of 10 times their earning capacity, this would have meant a value of $150,000,000.

Propose Dismissal of 3000 Workers in Economy Move

Dismissal of 3000 Mexican oil industry workers as a move to help wipe out the 68,000,000-peso deficit piled up by Petroleos Mexicanos is planned by the special committee instructed to find specific means for carrying out President Cardenas' orders to put the industry on a paying basis, it was reported in Mexico City last week. It is the general understanding that those to be dismissed will consist of workers employed since expropriation.

The committee has 90 days to put this and other economy moves into effect. During this period, President Cardenas will attempt to bring about harmony between two antagonistic wings of the Mexican Petroleum Workers Union. One group favors in general the president's plan of putting the government-operated oil industry on a paying basis, and apparently is willing to acquiesce in the proposal to dismiss many of the workers hired since expropriation. The other wing definitely is opposed to a reduction in personnel that would mean discharging about one out of every six workers.

War

German and British Claims for Air Raids Name Oil Targets

Essener National Zeitung, a Berlin publication, declared recently that bombing of Middle and Southern England by Nazi pilots had resulted in closing ports through which 51 percent of England's imports, including 60 percent of oil imports, normally entered the country. The article also claimed that through this campaign of destruction, normal function of 80 percent of England's refining capacity had been rendered impossible.

Among direct oil property hits on English soil claimed by Nazi fighters last week were those scored on large gasoline deposits just east of London and harbor oil stores at Faversham, Burryport and Pembroke. They said they had left the oil supply depot on the Isle of Wight nothing but a blackened, burned-out ruin.

Bomb Norway

On the other hand, the British Royal Air force claimed to have bombed the tank farm at Haugesund, Norway, and various oil plants in Germany, including a large underground oil storage plant at Kiel and refineries in the Ruhr and Hamm districts.

Operating in Africa, Royal Air Force pilots claimed to have set fire the oil storage at the Addis Ababa airport in Ethiopia. They again bombed Tobruk harbor along the Libyan coast. Much of the gasoline and water for use by Italian troops in this part of Africa is landed at Tobruk, the foreshore of which contains a large tank farm.

England Says Italian Supplies Sufficient for One Year

London sources, basing their statements on latest information regarding Italy's economic situation, declared last week that Italy's oil supplies may become acutely short after 12 months of war, and that shortages already were apparent in certain Italian stocks of raw materials.

They declared Italy already is competing with Germany in the Balkans for oil seeds, and that she is short of fats. They expressed the belief that Italy planned only to meet the needs of a short war.

This may explain the intensification of activity of Italian troops in East Africa, which recently culminated in the taking of British Somaliland, across the Red Sea from Aden, and the harrying of British naval activities in the Eastern Mediterranean. It has been pointed out that Mussolini's objectives in both engagements are closing of the Red Sea and the Suez Canal, and seizure of the oil fields of Iran and Iraq. Aden is only 45 minutes by air from the Italian-controlled portion of East Africa.

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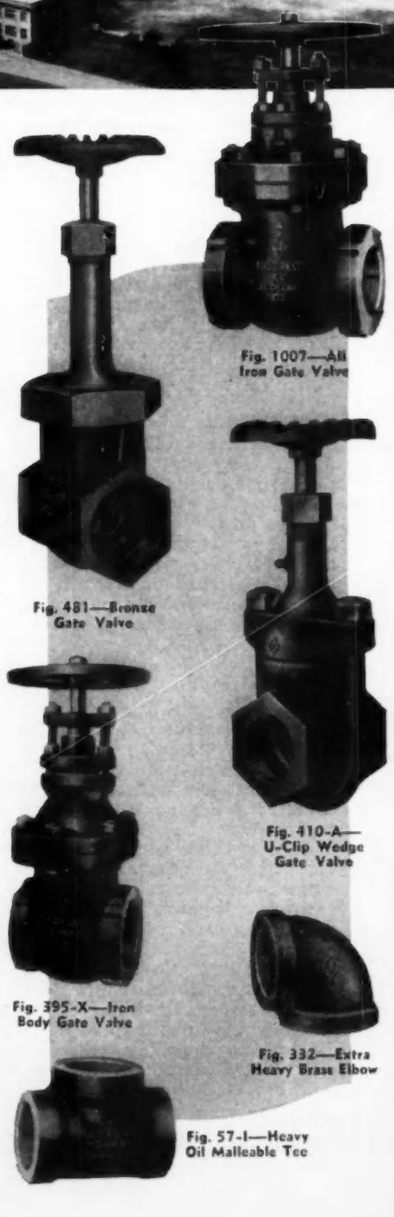

Fig. 1007—All Iron Gate Valve

Fig. 481—Bronze Gate Valve

Fig. 410-A—U-Clip Wedge Gate Valve

Fig. 395-X—Iron Body Gate Valve

Fig. 332—Extra Heavy Brass Elbow

Fig. 57-I—Heavy Oil Malleable Tee

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U. S. FIELD OPERATIONS

Kansas

Phillips County Well Pumps 858 Barrels for New Pool

Cities Service Oil Company completed Ray 1, NE NW SE 32-5-20w, Phillips County, for a pumping potential of 858 barrels per day from Reagan sand at 3540-53 feet, with hole bottomed at 3603 feet in Granite. The Kansas Corporation Commission designated the strike as Ray pool.

Hammer pool was designated at C. L. Carlock et al's Hammer 1, CNL NE NW 35-19-12w, a mile northwest of Ellinwood West pool, Barton County. After 2000 gallons of acid, a pumping potential of 441 barrels per day was established, without water. Productive horizon is Arbuckle lime at 3347-70 feet.

Shell Oil Company and Atlantic Refining Company opened the Riley pool at Riley 1, SWc 28-23-11w, between Zenith and Richardson pools, Stafford County. Arbuckle lime, topped at 3753 feet, was penetrated to 3772 feet, with 4½-inch casing cemented at 3762 feet. When plugs were drilled, hole filled 2900 feet with salt water. Perforations also failed to show in Viola lime at 3648-68 feet. Coming up the hole, perforations at 3471-76 feet in the Kansas City-Lansing lime zone, yielded 3270 feet of 29-gravity crude in 5 hours. Later, the wildcat began flowing by heads at the rate of 7 barrels per hour, and swabbed 53 barrels in 3 hours with 4 percent water and 7 percent basic sediment. Temporarily, it has been given a minimum potential of 15 barrels.

Shell Oil Company completed Bean 1, SEc SW 21-23-12w, for a maximum draw-down potential of 3000 barrels per day to open the Bean pool for Stafford County. This wildcat strike is on a structural trend between St. John and Richardson pools. It was awaiting pipeline connection.

Northwest of Gates pool, Stafford County, Seaney, Clampitt et al's Boyd 1, CW½ SW SW 4-21-14w, filled with water when plugs were drilled to 3644 feet in Arbuckle lime. Several shows in Viola lime will be tested, as well as Lansing lime shows.

New Mississippi Lime Area

Ralph Wixon et al's Clover Ranch 1, CE½ 17-31-7e, 3 miles west of Brown pool in Cowley County, opened a new Mississippi lime pool with over 250 feet of oil standing in the hole at 2812 feet. Production is estimated at 20 barrels per day.

A draw-down potential of 5700 barrels was given Champlin Refining Company's Hadley C-1, CNL NW NE 20-11-17w, after treatment with 3000 gallons of acid in Arbuckle lime at 3391 feet. This semi-wildcat promises to connect Burnett and Bemis pools, Ellis County.

W. M. McKnab completed Snyder 1, CW½ NW NW 15-34-3e, east of Gueda Springs pool, Cowley County, for 40 barrels per day on pumping potential. Mississippi lime was topped at 3301 feet and drilled to 3345 feet. Plug was set at 3280 feet in Bartlesville sand, and pay shot with 60 quarts. Gravity of crude tested 40. The wildcat opens a new pool.

Cities Service Oil Company's Lehrling 1, NE SW SW 19-27-11w, wildcat north of Gilchrist gas pool and west of Cunningham pool, Pratt County, set 5-inch casing at 4489 feet and perforated Arbuckle lime above 4529 feet, but water entered the hole. Simpson will be perforated before plugging.

Earl Wakefield et al abandoned Staatz 1, CS½ SE SW 23-17-11w, a mile northwest of Bloomer pool, Barton County, at 3350 feet in dry Arbuckle lime, topped at 3345 feet.

Transwestern Oil Company's Buck 1, CS½ SW NE 35-30-14w, 2½ miles northwest of Lake City pool in Barber County, was plugged at 4633 feet in Arbuckle lime. Lansing lime was topped at 3621 feet, Mississippi lime 4321 feet, Kinderhook 4326 feet, Misener sand 4382 feet which showed slight staining, Viola 4389 feet and Simpson at 4536 feet.

Vern McDaniel et al's Eckel 1, NW NE NW 7-27-7e, was completed to open a new Butler County pool. After acidizing Kansas City lime at 2184-89 feet with 1000 gallons, the wildcat pumped 40 barrels of 36-gravity oil in 24 hours. Location is 2½ miles north of Knox pool. Operators immediately staked location for Eckel 2, SW NE NW, south offset to the discovery.

Gulf Oil Corporation and Gled Oil Company deepened Sanders 1, CN½ SW SE 30-13-16w, Sanders pool discovery in Ellis County, from 3458 to 3465 feet, in Arbuckle lime. In 3 hours, the well swabbed 90 barrels when 1900 feet off bottom. Originally, the strike was completed for a potential of 312 barrels per day.

Vickers Petroleum Corporation has derrick at Peterman 1, CN½ NE NE 14-17-10w, semi-wildcat south of Stratman pool, Ellsworth County. Jones & Shelbourne have rotary rig at Lewis 1, SWc NE 28-14-12w, between Greenvale and Bunker Hill pools, Russell County.

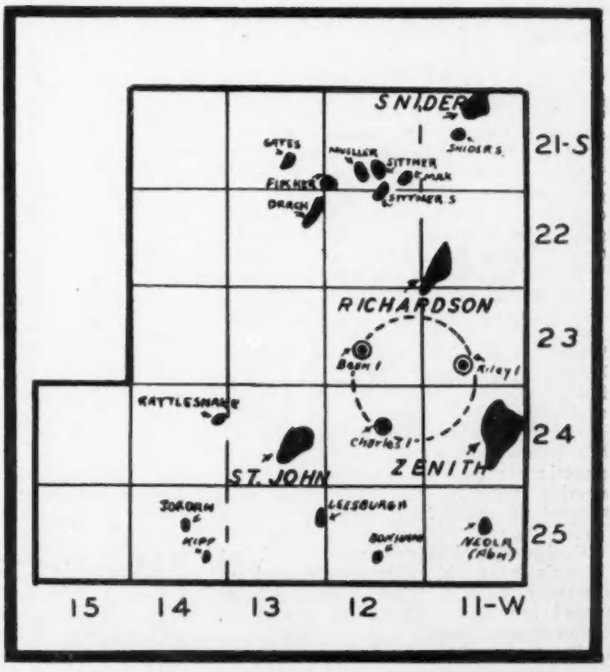
Third Stafford County Strike in as Many Weeks

Shell Oil Company, Atlantic Refining Company et al opened the third producing area for Stafford County, Kansas, within the past three weeks. Riley 1, SWc 28-23-11w, between Zenith and Richardson pools, perforated Lansing lime with 36 shots at 3471-76 feet after finding dry Arbuckle lime at 3762-72 feet. Over 2990 feet of 26.5-gravity oil filled the hole in 3½ hours. In 8 hours, the wildcat headed and flowed 82 barrels of crude without acid. Deep Arbuckle lime showed sulphur water, and Viola lime failed to show. Lansing pay was topped at 3323 feet and plug set at 3645 feet. A 3000-barrel maximum producer by draw-down potential test, is anticipated after acid treatment.

Shell Oil Company hit Arbuckle lime pay at Bean 1, SEc SW 21-23-12w, between St. John and Richardson pools, filling 3600 feet with 36.5-gravity oil when Arbuckle was drilled at 3839-52 feet. This strike logged two good shows of oil in Viola lime at 3737-40 feet and 3750-55 feet, being topped at 3714 feet. A core showed black oil in Simpson sand at 3800-05 feet. Lansing lime was topped at 3396 feet. Potential test will be taken.

Stanolind Oil & Gas Company completed Charles "A" 1, CN½ NE SE 15-24-12w, on August 7 for a maximum well of 3000 barrels daily. Pay zone for this pool-opener was Viola lime at 3815-50 feet. Crude tested 40.5-gravity. Operators immediately staked location for Crawford 1, CS½ SE NE 15-24-12w, a north offset.

Within a radius of 4½ miles, these strikes have provided new pools producing from three different horizons, Arbuckle, Viola and Lansing.



Oklahoma

Pool Openers Completed; Woods County Test Staked

Gulf Oil Corporation staked location for Hess 1, CNE NW 33-23n-13w, a deep wildcat test approximately 20 miles southeast of Waynoka in Woods County. The company has assembled a large block embracing a tri-county play in Woods, Major and Alfalfa. Considerable geophysical effort has been expended by the firm during the past three years in Harper, Woodward, Woods and Major counties.

Three wildcats were completed for new pool strikes. Champlin Refining Company's Kunkel 1, CE½ SE NW 23-23n-6w, Enid pool discovery in Garfield County, flowed 85 barrels of 40.4-gravity oil per day after treatment with 7000 gallons of acid. Only a trace of water was showing. Mississippi lime was perforated at 6160-85 feet, with top logged at 6070 feet.

Burke Greis Oil Corporation has a gasser and distillate producer at Dew 1, NEc 9-12n-9e, designated as the Mason pool, Okfuskee County. After perforating Hunton lime at 3891-3906 feet with 16 shots, gas gauged upwards of 12,000,000 feet, along with 120 barrels of 52-gravity distillate per day. Gas-line connection has been completed to the well.

Between Davenport and Sac & Fox pools, Lincoln County, Wilcox Oil & Gas Company opened Prue-sand production at Murphy 1, NE SE SW 7-14n-6e, completing for 12 barrels of oil and 25 barrels of water per day. Prue sand at 3202-3320 feet received a 20-quart shot, and was later reshot with 200 quarts.

New Zone for Coyle Pool

Helmerich & Payne, Inc., and Blackwell Oil & Gas Company completed Collins 3, CW½ NE NW 13-17n-1e, southernmost producer in Coyle pool, Payne County, for 49 barrels of oil and 440 barrels of water per day on the pump. Depletion of Wilcox sand production prompted operators to perforate Hunton lime at 4588-4720 feet. Originally, the well made a small flow at 4886 feet in the deeper horizon. Mid-Continent Petroleum Corporation's Johnson 2, CE½ SW SE 2-17n-1e, gauged 25 barrels per day from Wilcox sand at 4936-64 feet. Pay will be shot. The Texas Company's Minnich 4, CE½ NW NE 11-17n-1e, flowed 180 barrels in 24 hours by heads. Hole is bottomed at 4936 feet in first Wilcox, and pumping equipment was being installed.

Good saturation was cored at Stanley A. Thompson et al's Alliance Trust 1, SW SE SW 22-4n-2e, 8 miles northeast of Pauls Valley, Garvin County, in sand at 2915-18 feet. Seven-inch casing was cemented at 2914 feet after electric survey indicated possible production ahead. Belle City lime was topped at about 2220 feet, by drillers log.

Kerlyn Oil Company extended West Francis pool ¾ mile northward at Chism 1, NW SE SE 24-5n-6e, completed for 11,000,000 feet of gas daily. Cromwell sand was topped at 1930 feet and plug set at 1956 feet after originally penetrating to 2173 feet. Casing pressure gauged 650 pounds.

Dill Gets Two Large Wells

Two large producers were added in the Dill pool, Okfuskee County. John Droppleman et al's Dill "B" 2, NW SW SW 35-12n-8e, flowed 1080 barrels in 24 hours through casing. Pay is Cromwell sand at 3525-56 feet. Seran et al's Fee 5, SW NW NW 2-11n-8e, was completed for 1000 barrels natural in pay at 3515-44 feet. John Droppleman moved in rig at Dill "A" 2, NE NE SE SE 34-12n-8e, and Indian Territory Illuminating Oil Company staked location for Miller 1, SW NW SW 35-12n-8e, in the Dill pool.

Bud Lewis et al's Wooten 1, SEc 28-7n-17w, southeast of Hobart pool, Kiowa County, pumped and flowed 84 barrels of 36-gravity oil the first 24 hours, 81 barrels the second 24 hours, and settled to 40 barrels daily on the pump. Arbuckle lime was topped at 893 feet with best pay logged at 948-55 feet. Lime was treated with 1000 gallons of acid. Oil is being sold to the Komalty refinery. Ardie Baker has rig on ground for Copeley 1, NE NW SE 30-7n-17w, a mile south of Hobart pool on a lease obtained from Sun Oil Company.

In Kingfisher County, Phillips Petroleum Company was deepening Grape 1, CNW SE 30-18n-5w, below 8085 feet, expecting Arbuckle lime around 8250 feet. Second Wilcox sand was topped at 7721 feet, and green shale at 7905 feet.

Ray Stephens, Inc., was moving in heavy equipment for Langford 1, SEc NW 6-6n-9w, between Cement and Anadarko, Caddo County, for an 8000-foot test. A 6000-acre block has been assembled surrounding this wildcat. The Texas Company's Smith 1, CNE NW 2-5n-12w, plugged back with cement at 2544 feet to straighten hole, and was drilling ahead. Viola lime was topped at 2543 feet, and numerous stains of oil and shows of gas had been previously cored to 3300 feet.

J. F. Smith completed Brown 1, NE SE NE 6-7n-4e, for 277 barrels natural per day through 7-inch casing. Pay is Hunton lime, topped at 3957 feet and drilled to 3993 feet. It is northwest of St. Louis pool, Pottawatomie County, and has been designated as the Romulus pool by the Oklahoma Corporation Commission. Same operator immediately spudded Lightfoot 1, SW NE NE 6-7n-4e, a northwest diagonal offset to the discovery. Twenty-acre diagonal well spacing is being sought for development fo Hunton lime and Simpson dolomite horizons.

Two new producers were added in the Prague pool, Lincoln and Pottawatomie counties. Magnolia Petroleum Company completed Studer 1, NEc 5-11n-6e, Pottawatomie County side, for 163 barrels of oil and 19 barrels of water per day on the pump. Senora sand was topped at 3268 feet and penetrated to 3282 feet before given a 30-quart shot. Midstates Oil Corporation et al's Provaznik 2, SE SW SW 33-12n-6e, on the Lincoln County side filled 1000 feet with oil after operators recovered a saturated core at 3274-94 feet.

Trend of East Cromwell pool will be determined at Foundation Oil Company's Berryman 1, NEc 35-11n-8e, Okfuskee County. Cement plug was to be drilled at 3390 feet in Cromwell sand. Shell Oil Company's Replogle 1, NE SE SE 35-11n-8e, topped Bartlesville sand at 2741 feet, and was rotating below 3150 feet. The Texas Company's Berryman 1, NW SE SW 36-11n-8e, was below 2375 feet with Helmerich and Payne operating rotary tools. Both Shell Oil Company and Olson Drilling Company are using slim-hole rotary rigs.

Wildcat Failures

Ramsey pool, Payne County, was further defined to the south at Paul Williams et al's Allison 1, NW SW NW 30-18n-2e, which was plugged at 4597 feet, some 7 feet in the Mississippi lime. Since this test checked structurally lower than other dry holes in the vicinity, operators did not deepen.

Portable Drilling Company abandoned Messer 1, SEc NW 31-23n-5e, east of Masham pool, Pawnee County, at 2987 feet. No shows were logged in Layton series, topped at 2495 feet.

Staley & Hawkins et al's Taylor 1, SWc 9-2s-15w, 12 miles northeast of South Frederick pool, Tillman County, topped Arbuckle lime at 2100 feet and plugged at contract depth of 2500 feet, reporting no shows.

Illinois

White Test Provides Pool And New Sand for County

The Carter Oil Company opened a new White County field, 2 miles south of the Storms field, when 60 barrels of oil were swabbed in 24 hours from R. G. Dagley 1, SW SW SW 11-7s-9e. The well is being completed in the Pennsylvanian sand at 1505-15 feet and marks the first production from the formation in the county. Tubing was being run for a pumping test.

A Fayette County wildcat, Forest Oil Corporation's B. D. Paine 1, NE NE NW 27-4n-1w, attracted considerable interest when it topped the Glean Dean, first important marker, at 1050 feet, about 40 feet higher than it had been found in any previous test in the area. At an elevation of 475 feet, the test is being cable-tooled and was below 1122 feet.

An Effingham County wildcat where casing was cemented to test a Stein showing, R. H. Troop's B. K. LeCrone 1, NW SW 7-8n-4e, was still shut down pending title clearance. Casing was set at 1540 feet.

Kingwood Oil Company's Spencer 1, NW NW SW 19-3n-3e, Marion County wildcat six miles north of Salem, was drilling at 3193 feet in shale and lime, headed for the Devonian, after topping the Osage at 3078 feet. An oil show was cored in Salem lime at 2768-71 feet.

Glen Dean was topped at 1835 feet, Aux Vases 2254 feet, Cypress 2035 feet and Benoist at 2180 feet. Other Marion County wildcat activity included: Ponting et al's Rohner 1, SW NW NE 31-2n-1e, 3 miles north of Centralia, bailing out after drilling plug following a squeeze job. After plug was drilled, the hole filled 500 feet with fluid, mostly salt water with some oil. Total depth is 3194 feet in Devonian lime. Johnson et al's Johnson 2, NE 32-1n-1e, 3 miles southeast of Centralia, was drilling at 558 with cable tools.

Two miles west of Centralia, in Clinton County, Kistler's Phoenix 1, NW NW SW 14-1n-1w, was bailing out to drill plug to test Benoist saturation at 1303-08 feet. The location is beyond the proved west boundaries of the Centralia field, and if successfully completed would open a new field.

A Trenton test in the Centralia pool, where only one well has been completed in the formation, Allen Borton's Storer 1, NE NE 13-1n-1w, was drilling at nearly 3500 feet with cable tools. The hole is being deepened from the Devonian and should find the Trenton between 4100 and 4200 feet.

Jasper Pool Opener

A pool-opening well in Jasper County, Johnson Oil & Refining Company's Ed Mendenhall 1, SW SW SE 17-8n-10e, 15 miles from other production, swabbed 160 barrels of oil in 18 hours after a 1000-gallon acid treatment, a small percent of which was water, from the McClosky at 2447-2607 feet. It was to be tested further on the pump.

Carter Oil Company's Staley-Purcell 1, NW NW NE 27-1s-2e a Jefferson County wildcat 1½ miles south of the Dix field, was to be abandoned at 2401 feet in the McClosky. A dry Benoist, topped at 2030 feet, was cored, and no shows were found in the McClosky. Another Jefferson County wildcat, Tex Harvey Oil Company's Jefferson County Coal Corporation 1, C W½ SE SW 16-4s-2e, was drilling below 2650 feet in search of the McClosky after finding the Benoist dry.

In Washington County, H. C. Cass' Kasten 1, NW NE NE 13-1s-2w, was still shut down on orders at 1550 feet. It found the Cypress at 1350 feet, and a dry Benoist at 1536 feet, with elevation at 509 feet. In the Irvington field, also in Washington County, Magnolia Petroleum Company's first Devonian test, Tiemann 6, SW SW 23-1s-1w, ran electric log in Devonian lime at about 3153 feet. Benoist was topped at 1535 feet and Aux Vases at 1608 feet.

Rig has been moved in for the first Trenton test in the Sandoval field, Marion County, B. E. Martin, Trustee's Robinson 1, SE E½ SW 4-2n-1e, at present bottomed at 2984 feet in the Devonian. The contract calls for deepening 1275 feet, or to the Trenton.

Deepest test ever drilled in Edwards County, Superior Oil Company's Scott 1, SW SW NW 31-2s-11e, in the Albion field, was deepening from 5250 feet. Devonian was topped at 4952 feet, but no shows were found in the formation.

Indiana

Extension Test Indicates New Horizon for South Griffin

A possible new horizon and a southwest extension to the South Griffin field of North Posey County was indicated when W. C. McBride, Inc.'s Ed Swander 2, NW NE NE 4-4s-14w, set casing to test Aux Vases at 2784-97, which on a drill-stem test showed 2100 feet of oil in 30 minutes. The test, just east of McBride's Swander 1, showing for a light producer in the Cypress, set drillable casing opposite a prospective new horizon to the Griffin area, the lower Cypress or Weiler, at 2600-20 feet.

Two miles east of the new discovery, Milt Lobree was building derrick for L. P. Hill 1, NE NE NE 2-4s-14w. Clift Somers is contractor.

Among new wildcat locations was Jarvis Brothers' Murphy Heirs 1, SW SW NE 35-3s-13w, Posey County, two miles east of Superior Oil Company's production on the Mumford Realty Company lease.

In the Heusler Dome field of Marrs Township, Posey County, just north of Sun Oil Company production on the Strueh lease, Harris & Stewart's Weldon-Strueh 1, SW SE NE 1-1s-12w, set casing to test 15 feet of Waltersburg saturation, topped at 1730 feet. Total depth was 1749 feet.

In White River Township, Gibson County, west of Patoka, Roberts Brothers and R. L. Bauman's Hall 1, NW NW NE 20-1s-11w, was waiting on cement set at 1935 feet to test gas shows in both Cypress and Hardinsburg, at 1750 to 1780 feet. Total depth, through a dry McClosky, was 2360 feet.

Abandoned was a dry Devonian wildcat in eastern Gibson County, Columbia Township, L. B. Jackson and Midwest Development Company's Barthold-Sampley 1, NW NW NW 23-2s-9w, at 3515 feet. Also abandoned was a western Posey County wildcat, Hank Riddle and Hayes Drilling Company's Greathouse Island 1, NE NE NE 13-7s-15w, which set casing and tested both Tar Springs and Mansfield sands after drilling a dry McClosky to 2881 feet.

In the Rockport gas field of Spencer County, Gulf Refining Company's Snowden (John B. Moore) 1, NE NE SW 30-7s-6w, was cementing to test for gas well in Palestine sand at 891 feet.

In Knox County, southwest of Vincennes, W. C. McBride, Inc., was moving in rotary for C. C. Winkler 1, wildcat in SW SW SW 24-2n-11w.

Inactive after testing Barlow was O. F. Kelly's Miller 1, SE SE NW 2-8s-7w, in the Enterprise section of Spencer County.

In southwest Robinson Township, Posey County, two tests of Gulf Refining Company showed a dry McClosky on electric log and have been plugged back for a gas test in the Mansfield sand. They are Reincke 1, NE SE NW 8-6s-12w, and Lang 3, SE NE SE 6-6s-12w.

A wildcat location near Gentryville, Spencer County, C. R. Obermeyer's Bullock 1, SE SW SE 2-5s-6w, has been abandoned.

Forest City Basin

Pool Provided in Nebraska Area by 150-Barrel Well

Ten miles west of Falls City pool, Ogle Oil Corporation completed Ogle 1-A, NW SE SE 9-1n-14e, for 152 barrels of crude per day. Hunton or Misener, topped at 2255 feet, was penetrated 5 feet. This pool opener is a northwest diagonal offset to a dry hole drilled by Arab Petroleum Company at Ogle 1, CSE SE 9-1n-14e, which found Granite at 3420 feet and quit at 3424 feet. On the Hunton lime, the producer checked 15 feet structurally lower than the dry hole.

I. T. I. O. Company's Schaible-Kuttler 1, CNE SW 29-3n-16e, 10 miles north of Falls City pool, Richardson County, was averaging 370 barrels per day on the pump from Hunton lime at 2433-53 feet. This area has been designated as the Auburn pool.

Skelly Oil Company acidized Davisson 1, SW NW NE 20-1n-16e, Falls City pool, into a 720-barrel producer. Hunton lime, topped at 2234 feet, was cored to 2263 feet, total depth, when well filled to top and flowed over. Seven-inch casing was cemented at 2238 feet, and prior to acidizing the producer flowed 176 barrels of 31-gravity crude in 13 hours with no water. After treatment with 3000 gallons, flow was stepped up to 30 barrels hourly for 8 hours.

R. L. Campbell et al's Shock 1, SW SE NE 20-1n-16e, farthest southeast producer, was estimated at 500 barrels natural per day. Pay, logged at 2244-58 feet in Hunton lime, was treated with 2000 gallons.

Seventh producer for the pool was indicated as E. J. Shaffer et al's Sandrock 1, NE SW NW 20-1n-16e, topped Hunton lime at 2229 feet and full recovery in a core at 2217-35 feet disclosed 5 feet of good saturation.

E. J. Shaffer et al spudded Boose 1, CNE NW 16-1n-16e, a mile northeast of production in the Falls City pool. One mile northeast of Auburn pool, Richardson County, W. H. Martgan will shortly stake location in S½ SE 20-3n-16e.

In Nemaha County, Nebraska, Bow & Arrow Oil Company has moved in materials for Wrightsman 1, CW½ SW NW 36-6n-14e, northeast of Jock Garden et al's Ord test in CNW NW 8-5n-14e. Operators were drilling at the latter test below 3025 feet. Hunton lime was topped at 2249 feet, Silurian at 2505 feet, and Maquoeta at 2904 feet. Same operator's Shrieffer 1, CN½ NE SW 20-5n-14e, logged a show of dead oil at 320-329 feet and was rotating below 550 feet.

Dan McLaughlin staked two new tests in the McLouth pool of Jefferson and Leavenworth counties, Kansas. One is in NWc 3-10-20e, Leavenworth County, while the other is in NWc NE 4-10-20e, Jefferson County. Three gas wells and one oil producer have been completed in this area.

O. M. Evans and Skelly Oil Company were drilling with machine at Arnote 1, SEc NE 36-55n-29w, in the Arnote gas field of Caldwell County, Missouri.

In Nemaha County, Northeastern Kansas, Jerry Ladd et al's Achten 1, CSL SE NW 12-4s-14e, tested salt water at 1140-70 feet and was lowering pipe before deepening.

West Texas

Two Yoakum County Oil Pools Receive Extensions

Two Yoakum County areas recorded extension producers last week. Sloan & Zook Company and Tom Sloan's Waples-Platter 1, C SW SE Section 565, ¾-mile northeast outpost for the Waples-Platter 1-well pool, was awaiting acid treatment in broken saturation at 5240-97 feet. The hole filled 1500 feet with oil, and on swabbing test indicated a natural yield of 25 barrels daily. Seven-inch pipe was cemented at 4827 feet so as to permit heavy nitro shot without risking casing damage. It is about level with the discovery pumper in logging top of brown lime at 4340 feet and solid lime at 4730 feet, with an elevation of 3553 feet. It quit 12 feet above the first water zone found by the original test.

Shell Oil Company's Hudson 1-B, NWc Section 858, a mile south of production on the southwest edge of the Wasson field, swabbed 4 barrels fluid hourly, averaging 4 percent BS&W, with the hole bottomed at 5115 feet, or 1447 feet sub-sea. It will be acidized. A small producer is anticipated, as it is low on structure, having logged top of brown lime at 4020 feet and solid lime at 4530 feet with an elevation of 3668 feet.

Stanolind Oil & Gas Company's Midland 1-C, C NW SW Section 35, 1¼ miles east of production in the North Cowden field, tested a small volume of free oil with salt water when plugs were drilled from 5½-inch pipe at 4726 feet, and the hole bailed dry at 4845 feet. Broken saturation at 4773-4827 feet gave promise of establishing a new production level although the test is structurally low. The well may be acidized. Midland 1-C was originally scheduled to proceed to the Holt pay, or 5500 feet. Cities Service Oil Company's Rhodes 6, near C NE NE Section 24, near southeast edge of the North Cowden field, proved an exceptionally large producer in flowing 350 barrels natural in 3 hours, then earned a potential of 3220 barrels after 305-quart nitro shot at 4074-4194 feet. M. J. Delaney et al's R. W. Smith 1-B, NWc T&P Section 7, T-1-S, has started up as an east outpost. Texas Pacific Coal & Oil Company farmed out the north half of Section 7 for a test, retaining ⅛ to 1/16 over-riding royalty on flowing and pumping production, respectively. R. W. Smith pledged lease on the south half of the section for a test, if the first project develops commercial production.

Another for Jordan

Parker Drilling Company's McDonald-Texaco 4, SE NW NE PSL Section 27, Block B-16, southwest edge of the Jordan field, became the fourth large producer for the lease in flowing 275 barrels of oil in 3 hours after 980-quart nitro shot in broken pay at 3430-3685 feet.

Texas Pacific Coal & Oil Company and Seaboard Oil Company's Midland 1-A, southeastern Andrews County prospect, failed to overcome water in plugging back by stages from 4888 to 4864 feet, and the test was abandoned. Another try will be made on the partnership's lease block, but may be deferred until next year. Phillips Petroleum Company's Frank Cowden-Embar 1, 4 miles west of the Emma pool, Andrews County, was drilling at 3990 feet, having logged first lime at 3795 feet with an elevation of 3238 feet.

Cedar Lake pool, northeastern Gaines County, began its second year as a source of oil production last week with two wells in process of completion for a total of 9 producers and no failures. All development has been on Stanolind Oil & Gas Company's discovery block, and has been on a restricted basis since it costs 23 cents per barrel to deliver the oil to Humble Pipe Line Company's Means field station. However, a direct pipe-line connection will be available late this year. Stanolind Oil & Gas Company's Bremont 1, northeast outpost for the main pool, encountered more gas than other wells in drilling to 4790 feet, or 1712 feet sub-sea. This well flowed 264 barrels oil through casing in 24 hours before cleaning out cavings resulting from 560-quart nitro shot at 4675-4790 feet. Humble Oil & Refining Company has two producing offsets that are due to be taken care of shortly. Magnolia Petroleum Company's Sandidge 1, Dawson County wildcat and 3 miles east by south of Cedar Lake production, was drilling at 3015 feet. It is due to run intermediate casing string near this level. Top of anhydrite was called at 2195 feet, about 100 feet low on field correlation.

Shipley Pool Deep Test

Gulf Oil Corporation's Wristen 5, prospective Ordovician producer for the Shipley shallow pool, Ward County, failed to record additional saturation or porosity in coring to 9187 feet in Ellenburger dolomite, topped at 9002 feet, or 6501 feet sub-sea. A fishing job developed at the latter depth while attempting another drill-stem test. An earlier test at 8967-9049 feet yielded 350 feet of drilling fluid averaging 2 percent high-gravity crude, but no gas or water. Pipe is due to be landed to acidize the upper Ellenburger section, while two saturation levels below the regular Permian production will also be tested.

Retarded by a thick section of hard chert, Plymouth Oil Company's Levy 1, northwestern Pecos County Ordovician project, plugged back from 6473 feet to 4072 feet. String of 5½-inch pipe has since been cemented at 3999 feet to test nominal saturation and porosity passed up at 4050-77 feet. Taubert-McKee & Siemoniet's Crocket 1, northern Pecos Ordovician project on a strike between the Apco and Sand Hills deep areas, cemented protection string of 9⅝-inch pipe at 2902 feet.

Low structural position was recorded by two tests seeking production from the Crinoidal lime in the Todd pool, Crockett County. Amerada Petroleum Corporation et al's Todd 1, ½ mile west of the discovery, logged top of Crinoidal at 5828 feet or 3393 feet subsea, being 278 feet low on this marker. Seven-inch pipe was cemented at 5836 feet after coring oil-stained lime at 5838-45 feet. Continental Oil Company et al's Todd 5-B, southeast outpost and an indirect offset to an Ellenburger failure, was coring at 5830 feet, with 7-inch cemented at 5792 feet. Top of Crinoidal was called at 5785 feet, or 3296 feet sub-sea, being about 82 feet lower on this marker than offset producers to the north and west, and 181 feet lower than the discovery. Development to date indicates that the Crinoidal producing area will be confined to several hundred acres, unless the sharp structure flattens to the north. However, the Simpson and Ellenburger zones are prospective zones of production.

J. K. Hughes Oil Company's Shannon 1, Western Crockett County semi-wildcat and 1½ miles north by east of dry gasser in the Soma pool, was drilling at 1310 feet, having reported first salt at 970 feet with an elevation of 2863 feet. M. & M. Drilling Company et al's Bouscaren 1, nearest producer, remains shut in after testing 40,500,000 feet of dry gas at 1555 feet. However, the gas is from the Soma sand at 1512 feet in Yates section, topped at 1371 feet, or 1500 feet above sea level.

North Texas

Start Ringgold Pool Extension Attempt Into Clay County

Development of the Ringgold pool is to be expanded 1½ miles west into Clay County with starting of operations by Walter H. Gant et al on H. D. Stine tract, SEc H&TC Section 25, Block 4. Drilling site was obtained from F. P. Cullum, who assumed an obligation to drill a deep test when lease was purchased last June. The new project is due west of British-American Oil Producing Company's Martin 2, which gives promise of making an oil producer from saturation in dolomite at 5864-70 feet in Ellenburger, topped at 5860 feet. Drill-stem test at 5965 feet, total depth, with open hole below surface pipe at 510 feet, indicated that the lower pay warrants production test through casing. Pipe will be run to bottom, then perforated opposite the Ellenburger saturation, and if necessary opposite oil shows in conglomerate at 5831-36 feet, 5813-18 feet, both lower Bend, and at 5680-87 feet. W. B. Omohundro and Gulf Oil Corporation are drilling one test each in the pool.

Protection string of casing is due to run by Walter Gant et al to carry their Will Laird 1, Southwestern Montague County wildcat, to the Ellenburger before plugging back and perforating opposite favorable oil saturation passed up in Bend and Strawn. This prospect was having trouble with Simpson shale cavings while drilling with rotary at 6608 feet. Top of Bend was called at 5690 feet. Britt Cranfill and C. E. Rodgers' McKay 1, Northwestern Wise County wildcat and 2¾ miles south of Laird 1, was drilling Strawn shale at 4830 feet. Nominal oil stain and odor

has been logged at intervals below 4172 feet.

Tom Owens and Larry Hults' Tucker 1, Western Montague County wildcat, logged first broken lime at 5777 feet, dense lime at 5792 feet, and was drilling at 5810 feet.

Delay Test of Clay Wildcat

Production test for H. M. Horton and Pete Wiggins et al's Howard 1, Western Clay County wildcat, has been delayed pending arrival of a spudder after plugging back from 5604 to 5488 feet, with 5½-inch pipe cemented at 5460 feet. Oil saturation at 5460-84 feet in Bend lime, topped at 5458 feet, is expected to make a producer, while saturation in Strawn at 4282-98 feet affords a second bet. Continental Oil Company et al's O. O. Ross, Jr. 2, south offset to the partnership's Jolly pool discovery, was drilling plugs from 6-inch pipe at 5387 feet, having logged 5 feet of oil saturation in the Bend in coring to 5392 feet. Petroleum Producers Company's O. O. Ross 1, ½ mile west of production, was starting up to fulfill lease purchase obligation.

East Texas

Upper Travis Peak Doubles Yield of Camp County Wildcat

Natural flow of oil from Harry Moss and Delta Drilling Company's Joe Venters 1, Camp County wildcat strike that has been in process of completion for a month, increased 100 percent after perforating pipe opposite Upper Travis Peak sand. However, the gas volume was not adequate to flow the oil beyond 2-hour periods. The well flowed 156 barrels of 41.7-gravity crude through ¼-inch choke during 24 hours ending August 29, making this yield in four 2-hour periods. Production is from original perforations at 8000-42 feet, which averaged 75 barrels daily, and from new perforations at 7948-86 feet.

Gulf Refining Company is purchasing the allowable production of the Camp County well, using tank trucks in making deliveries to its East Texas field system.

Prospecting in the East Texas Woodbine belt recorded five failures the past week. In Wood County, Plains Production Company's Smith 1 quit in Woodbine at 4625-60 feet. F. B. Paine Drilling Company and Frank Schackelford's Oliver 1, 3½ miles northwest of Grand Saline, Van Zandt County, topped Woodbine at 4136 feet, and quit at 4607 feet. The Bazette faulted structure, Navarro County, added a failure with completion of McKinney & Killough's James 1 at 3321 feet. R. T. Myers, Richards & Holloway's Turner 1, Ore City area, Upshur County, failed to complete plans to deepen to the Paluxy, and was plugged at 4211 feet in Georgetown lime. Another Lower Trinity failure was recorded for the Mexia field when Taylor-Lytle and Phillips' Reid 1 yielded water through casing perforations opposite the Odessa and Pettit zones. It was drilled to Travis Peak at 5795-6126 feet, then cemented 5½-inch pipe at 5870 feet. An effort will be made to plug back and try for gas in the shallow Nacatoch sand.

Southwest Texas

Victoria Test May Provide New Pool on Extension

A new pool or a material east extension to the old McFaddin field of Victoria County appeared likely with Humble Oil & Refining Company's E. D. Nave 1 preparing for completion. The test, in the Traviesa Grant, is about 1 mile east of several old gas wells drilled during the early days of the McFaddin exploratory program. Since that time, several spots on the tremendous structure have proved productive of crude at various levels. The Nave test was plugged back from 6081 feet and perforated at 5947-49 feet. On a drill-stem test, it rocked up 160 pounds pressure in four minutes and recovery was 100 feet of oil-cut mud and 540 feet of salt water. The perforations were squeezed, and new ones were scheduled in the same sand.

Humble Oil & Refining Company's Duncan 1, 7800-foot southwest extension to the East Flour Bluff field, Nueces County, has been completed in the discovery zone at 6787-6800 feet. First tests developed salt water, but these perforations were squeezed and others made higher in the same sand. The potential test gave the well 122.82 barrels of 40.6-gravity oil plus 25 percent salt water through ⅛-inch choke. Pressures were 750 pounds on tubing, and 1050 pounds on casing. Gas/oil ratio was 500/1.

S. E. W. Oil Company was opening a new sand 3100 feet east of East Stratton crude production in Nueces County. A drill-stem test at 6667-6703 feet, all sand, recovered 8 stands of oil, 4 stands of mud and developed 42 pounds pressure in 20 minutes. It was coring below 6900 feet.

Stanolind Oil & Gas Company finished Ivey 1, a mile north extension to the Midway field, San Patricio County. It made a large volume of salt water when first tested, but recompletion through perforations at 5326-29 feet resulted in only 6 percent salt water. It flowed 97 barrels of 28-gravity crude per day through ⅛-inch choke under 520 pounds working pressure and 860 pounds casing pressure. Gas/oil ratio was 314/1.

Potential test on Colton & Colton's discovery of the Terrell field of Victoria County rates it at 23.23 barrels of clean 30.2-gravity oil per day on pump. It is producing through perforations at 5274-84 feet, in the Vicksburg sand.

Wilcox Strike Precipitates Large Leasing Program

A leasing program, which already has approximated 100,000 acres and which likely will see the figure trebled within a few weeks, is following establishment of Wilcox sand production on a new trend in South Texas. La-Salle County's first producing oil well has uncovered a series of zones at 4860-70, 5060-70 and 5418-25 feet, all in the Wilcox, topped at 3612 feet. Several other sand zones have been found in the well, but the Wilcox are the only ones to be given a production test.

H. R. Cullen's Washburn 1, SW Section 67, was preparing for a gauge after flowing at the rate of about 5 barrels of 43-gravity oil and a small cut of slightly brackish water per hour through ⅛-inch choke under 480 pounds tubing and 1050 pounds casing pressures. Perforations had been made at 4860-68 feet. Approximately 2000 barrels of storage were being installed over the week-end, following which the definite value of the well will be determined.

Several more LaSalle County wildcats were rumored, one of which will be several miles east of the Washburn test and a second for Cullen in the general vicinity of the producer. Cullen has abandoned Wildentahl 1, at the west edge of the Cotulla city limits, also LaSalle County, failing to find production to 6367 feet, and rig is to be skidded about 1500 feet southwest for another operation on the same tract.

Boyle Has New Horizon

A second producing zone, 400 feet shallower than the discovery level, was opened a 1-mile south extension to the Boyle field of Starr County. Borsodi Petroleum Company was preparing to make a final test in Vela et al 1, Share 2-A, Porcion 92, after perforations had been made at 3167-75 feet with 24 shots. The well flowed at the rate of 100 barrels of clean oil per day through ⅛-inch choke under 500 pounds working pressure on the tubing, and 1000 pounds on the casing. It had been drilled to 4202 feet, but was plugged back.

North Rincon field production in Starr County was being extended two miles northeast as Sun Oil Company's Saenz-State 1, Survey 80, continued to core sands. A drill-stem test at 4530-41 feet recovered 60 feet of oily mud and 120 feet of salt water in 15 minutes. A test at 4712-33 feet found only drilling mud. Another test at 4846-54 feet recovered 15 feet of oily mud, 1042 feet of water with oil show, 734 feet of salt water with 1030 pounds bottom hole pressure while flowing and 2010 pounds when closed. Another sand was encountered at 4899-4911 feet, but the hole was being deepened.

Error in Travis County Operation Report

Following is a letter received from O. G. Raesz, Austin, Texas, concerning an error made by THE OIL WEEKLY in reporting his operations in Travis County:

"Some time ago THE OIL WEEKLY reported that the O. G. Raesz et al, No. 1, J. W. Swahn, Philip McElroy Sur. No. 16 in Travis County, Texas, was abandoned. Such report at the time was in error and I know that you will be glad to publish the facts concerning the operations on that lease.

"The well was commenced in February, 1939, and was drilled with a cable-tool rig. Due largely to structural conditions the drilling was difficult and the dip of the structure caused a gradual curve which at a depth of 620 feet became too great for further drilling.

"So the rig was moved over 10 feet and the drilling was again started. At

320 feet the second hole ran into the first one, continued along the old course about 80 feet and then set a new course.

"At a depth of 1,090 feet pay formation was discovered at the top of the Edward's formation and continued for 20 feet until black sulphur water was reached. The water soon reached the surface and brought with it a considerable amount of oil.

"The water was plugged back and after about three hours after the well had been acidized, the well blew in with great pressure. After making four heads, each head continuing for about 10 minutes, the heads being about 10 minutes apart, the pressure was so great that the pipe collapsed and the oil and gas came to the surface.

"It came to the surface through the old abandoned hole even though the control head was open. Pressure forced the oil to the top of the derrick, the oil going up into the air about 60 feet.

"However, the fact that the pipe collapsed makes it impossible to reach any considerable distance into the well. The condition of the pipe makes it impossible to develop this well.

"But the company will try again. The drilling of another well will be commenced at an early date.

"I assure you that I shall appreciate your giving proper publicity to the above statement."

Continue Test of Atascosa Wildcat

After recementing bottom plug, W. J. Walton Drilling Company was preparing to again swab B. R. Tuerpe 1, wildcat in the Rogers Survey of Atascosa County. A producer would open the first Austin chalk production in the county. The test topped the chalk at 2399 feet, showed oil in this formation and again in the Buda limestone. Edwards limestone was topped at 2823 feet, and hole deepened 7 feet to 2830 feet. Casing was landed at 2403 feet.

Duval Wildcat Shows Good

Duval County was adding a new Frio sand oil field, second producing area for the large Driscoll ranch, as Continental Oil Company's Robert Driscoll Estate 1-B, SE Section 481 and 1¼ miles east of the Driscoll field, plugged back from 4515 feet to test through perforations at 2530-35 feet with 12 shots. It first flowed oil and salt water, but after being reworked, it produced at the rate of 168 barrels of 23-gravity crude per day through ¼-inch choke under 100 pounds pressure on tubing and 500 pounds on casing. The well had been drilled by Trinity Drillers, Inc., San Antonio.

It is understood that a second location will be staked immediately.

Texas Gulf Coast

Activity Below 1938-1939; Ogburn May Have New Sand

Upper coastal activity continued at a consistent pace, registering 86 completions during August for an 8-month total of 867, 8.5 percent below that for the similar period of 1939, and 15 percent below the 1938 level. The 86 completions were in contrast to the 109 and 147 made in July and June, and the lag from 1939 was not increased only because of the general shutdown at this time a year ago. Active operations increased from 120 to 124 during August, with inactive operations increasing by the same amount. This index was 12 percent under that for a year ago.

A prospective new sand for the Ogburn field, northwest Harris County, will be tested by Walter L. Goldston in Josey Farms 1, 2000-foot north extension test which found gas in the 2918-26-foot discovery sand, a 10-foot shale break below that sand, then a sand which contains 4 percent saturation according to core analysis. Casing was set at 6939 feet for drill-stem test of the new sand.

At Wilson Creek, Matagorda County, Barnsdall Oil Company will also attempt confirmation in a new sand. Stoddard 1, 1700 feet northwest of United North & South Development Company's discovery, has pipe set at 10,246 feet and was drilling 300 feet short of the 10,500-foot contract depth which will be reached before a 10,254-foot sand is tested. The test blew out in June from 10,295 feet, flowing several million feet of gas and 350 barrels of 40-gravity oil daily for two days before bridging enabled operators to shut the well in and recover junk.

Rowan Confirmation Test

Rowan, Brazoria County, was in line for confirmation as Rowan & Nichols prepared to test Hubbard 2, 1220 feet north of the discovery, setting retainer at 8555 feet for a squeeze job below the 3529-foot discovery sand, topped 3 feet above its level in the initial test.

Rockland field, Jasper County 1940 strike, went unconfirmed as Midwest Oil Company of Texas abandoned Boykin Heirs 4, Racki Survey, at 1261 feet.

East Bernard, H. C. Cockburn's 1940 Wharton County gas discovery, has been given an outlet by Cockburn's deal with Texas Natural Gas Utilities Company to pipe gas from Leveridge 1 to the town of East Bernard for domestic purposes.

Mount Houston, recently opened Harris County gas area, may be tested to 8000 feet by H. C. Cockburn's Burkitt 1, Bundick Survey, 1½ miles southeast of Jack Frazier's Griffith 4, gas discovery which gauged 1,200,000 feet with a small amount of 26-gravity oil daily through ¼-inch choke, under 350 pounds pressure. The Cockburn test will halt at the 4200 foot horizon, which flowed oil in Griffith 1, Frazier's first test of the prospect, if production can be established there.

In the Hillendahl-Addicks area, Harris County, west of Houston, Cities Service Oil Company will drill Keuhn 1, 7800-foot wildcat in the G. L. Bellows Survey. This is on the extreme east edge of an 8-year-old Cockburn gravity anomaly area which has been drilled by Frazier, Cockburn, Housh & Thompson, Temple Hargrove and The Texas Company, with the most encouragement experienced in Housh & Thompson's Krey 1, 3 miles southwest of Addicks, which showed oil in the Cockfield at 7570 feet, with the other tests finding little or no sand in the Cockfield section.

E. J. Du Pree's Walker County wildcat, Texas Long Leaf Lumber Company 1-A, which created a sensation when it swabbed oil from 2916-26 feet to indicate the county's first production, was abandoned at 2908 feet. Tests at 2676-94 and 2680-94 feet recovered fresh water. These sands made up the 110-foot section which showed for a potential pay on electric log of the Carrizo or Wilcox. The test, 6 miles south of Lovelady in the Millsaps Survey and 2 miles southeast of the Kittrell field, Houston County, was Du Pree's second attempt to obtain the northernmost Wilcox production in the coastal sector.

New operations included Hebert & Smith's Yount 1, A. Houston Survey, Jefferson County, an 8000-foot test a mile west of West Beaumont production, with objective the Marginulina-Frio sands which produce in that field. Rowan Drilling Company has the contract, and W. G. Christian's Guidry 1, wildcat in the Chavano Survey, Hardin County, projected to 7000 feet. Titantic Oil Company and Crown Central Petroleum Corporation will drill Mazola 1, 8000-foot wildcat in the S. Kennedy Survey, 2 miles north of the Orchard field, Fort Bend County. Pan-American Production Company rigged Sisk 1-B, semi-wildcat on the south flank of Markham dome, Matagorda County, 2000 feet south of production. Projected depth is 8100 feet, and location is in the Atherton Survey.

Humble Oil & Refining Company has released the following markers on Furr 1, 9510-foot dry wildcat in the Singleton Survey, 1½ miles north of Penn City, on the Green's Bayou prospect: Frio 5077 feet, Warreni 7050 feet, Hockleyensis 8030 feet, Operculina 9263 feet, Cockfield 9294 feet and Nonionella Cockfield 9323 feet.

Gulfboard Oil Corporation gauged Poole 1, gas discovery at Lissie, Wharton County, at 1,850,000 feet daily, with 25 barrels of distillate, through 5/32-inch choke under 2000 pounds pressure.

Jordan Drilling Company will make another attempt to establish sustained commercial production on the Hockley dome, Harris County, by deepening The Texas Company's Warren 15, abandoned 2090-foot short-time producer, to the top of the salt. The well is on the east side of the dome, in the Ehrenburg Survey. Landreth Production Company and Keystone Royalty Company completed Sutherland-Buck-Kraft 2, mile northwest extension to the North Houston sector of the Fairbanks field, for an estimated 250 barrels daily, flowing through 3/16-inch choke from 6833-45 feet, apparently the equivalent of the Fairbanks sand, and 200 feet higher than the North Houston gas-distillate sand. Well was killed to recomplete with lower gas/oil ratio. Union Producing Company will attempt a 2000-foot south extension to this field in Citizens State Bank-Davis 1, projected to the regular gas-distillate pay.

Louisiana Gulf Coast

Miocene Well May Increase Value of South Crowley

South Crowley, abandoned Acadia Parish semi-commercial field, was expected to produce as Humble Oil & Refining Company ran 7-inch casing to test Miocene sands at 7552-60 feet and 7560-70 feet in Leger 1. On drill-stem test, the first zone yielded 13 thribbles of 36-gravity pipe-line oil in 6 minutes through ¼-inch chokes under 60 pounds pressure. The latter strata tested 23 thribbles of pipe-line oil in 8 minutes through ¼-inch chokes under 110 pounds pressure. Completion will be attempted first in the second sand, which is at bottom. The wildcat, in Section 22-10s-1e, is an east offset to the firm's Boyd-Finch 1, which in 1938 produced 21 barrels hourly from 7308-14 feet, was killed and recompleted for 35 barrels daily in the same strata, and abandoned after producing 2000 barrels. The test is the ninth for the prospect, four deep dry holes preceding the original discovery, and three dry holes following. The current test was drilled on a block assembled by Lew Wentz. Other leaseholders are Sun Oil Company, Stanolind Oil & Gas Company, and The Ohio Oil Company. The structure was found by Humble Oil & Refining Company in 1934 with reflection seismograph.

A new field was in the offing for Jefferson Davis Parish as Union Sulphur Company's Calcasieu National Bank 1-A, China prospect wildcat, flowed into pits at the rate of 6 barrels of distillate daily, fluid 85 percent wash water, through ⅛-inch choke from 9256-9305 feet. Pressure was 3150 pounds. The test blew out from this zone while running casing. With liner at 9494 feet, the well made dry gas, then 100 percent salt water. Perforations up the hole resulted in the apparent discovery, which, if sustained, will constitute coastal Louisiana's twelfth or thirteenth new field, depending upon results in Humble Oil & Refining Company's South Crowley well. The structure, which centers under Section 36-7s-4w, was found in 1938 by Union Sulphur Company with reflection seismograph. The company drilled Tietje 1 and 2, abandoning the first at 9220 feet after finding shows at 7632 feet, and the latter at 9453 feet with no shows.

Confirmation of the Bayou Des Glaise field, Iberville Parish, was deferred as Humble Oil & Refining Company abandoned Wilberts 2-B, directional hole drilled 50 feet from the discovery, at plugged-back depth of 8015 feet. Last test at 8180-94 feet swabbed a barrel of salt water with a small show of dead oil. The well produced for several days from the discovery sand at 8648-58 and 8660-8731 feet, but died and was drilled to 9100 feet, where stuck pipe made it advisable to junk the hole.

Seventh Sand for Golden Meadows

The Texas Company opened the seventh and deepest Miocene sand at Golden Meadows, LaFourche Parish, by completing Louisiana Land & Exploration Company 12, Section 78-19s-21e, for 366 barrels of 35.5-gravity pipe-line oil daily through 5/32-inch choke from 11,063-067 feet. Tubing pressure was 1520 pounds, and bottom of hole at 11,161 feet. The well also disclosed a possible eighth productive sand as it flowed on drill-stem test at the rate of 81 barrels of 52-gravity distillate daily from 10,740-753 feet, ¼-inch top and bottom chokes, pressure 3700 pounds. Previously, the deepest pay was at 10,000 feet.

A new sand, possibly two, was expected at Cameron Meadows where W. T. Burton's School Land 4, northeast flank test, Section 36-13w-14s, an old producer deepened, logged strong kicks on sands at 4050-4110 feet, and 5050-80 feet, and was prepared for test in the shallower sand. The field now has five Miocene pays between 3350-5273 feet.

Potential test on H. M. Naylor's Acadia Development Company 1, discovery of the West Mermentau gas/distillate field, Jefferson Davis Parish, yielded 45 barrels of pipe-line oil through 3/16-inch choke from 9120-35 feet. Tubing pressure was 3450 pounds.

At Bayou Chopique, Calcasieu Parish, Hamman Exploration Company and Albert Fay abandoned Sabine Rice Lands 1, Section 16-11s-10w, at 9200 feet, with no shows encountered. This is the second test for the new seismograph prospect, upon which Gulf Refining Company has drilled a dry hole.

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North Louisiana

LaSalle Parish Wildcat Runs Casing to 3695 Feet

Placid Oil Company was running 5½-inch casing to bottom at 3695 feet for a production test in Goodpine A-1, SW NW 10-7n-3e, wildcat in LaSalle Parish, ten miles south of Jena. The test has been drilled tight.

J. M. Conner's Williams A-1, SE NE 3-15n-15w, south Caddo Parish wildcat, with casing perforated at 5120-35 feet, after drilling to 6500 feet, was pumping an estimated 10 to 15 barrels of 38-gravity oil daily along with 75 barrels of water. The same operator planned to drill another test on this block, probably in Section 32 or 33-15n-15w. It would be the third in a series of 6000-foot tests.

Adjoining this block, C. S. Worley, Oklahoma City, has assembled a wildcat block around Section 16-16n-15w for a Glen Rose test, and in the same Parish, in 17n-16w, Calotex Oil & Gas Company was taking leases.

The Shreveport field, producing from basal Glen Rose lime, was extended one location south by completion of Gerhig Company's Colored Methodist Church 1, SW 35-18n-14w, Caddo Parish, making 50 barrels of oil daily from 5626 feet after casing was perforated at 5604-26 feet.

Deepest test in North Louisiana at present is The Ohio Oil Company's G. W. Taylor 15, Account 1, SE 15-23n-8w, in the old shallow Haynesville field, Claiborne Parish. It was drilling below 9068 feet after topping Bodcaw sand of lower Marine at 7654 feet. Objective is Smackover lime around 9300 feet.

C. H. Lyons, Shreveport, on a farmout from Standard Oil Company of Louisiana, located a 5500-foot Travis Peak wildcat in Lincoln Parish, Dubach Lumber Company 1, SW NW 30-20n-3w.

W. L. Hamilton et al, on a 700-acre block in the old Spider area, DeSoto Parish, made location for a 2850-foot shallow semi-wildcat, S. A. Kidd 1, NW NW SW 36-12n-14w, near an old test in the same section drilled several years ago.

North Louisiana added 12 new oil wells last week, of which 6 were in the shallow Pine Island field, Caddo parish; 1 in the Vivian offshoot of the same field; 1 in the Shreveport field, and 4 in the shallow Olla field, LaSalle Parish.

Southern Production Company, subsidiary of Southern Natural Gas Company, Birmingham, Alabama, which has a trunk line from North Louisiana serving several southeastern cities, secured 3307 acres of a 5838-acre block from Redditt & Gray in the Joaquin gas/distillate field, Shelby County, Texas. The acreage, mainly Pickering Lumber Company Fee, is in the P. J. Loggins, J. Talbot, I. O. Strickland, John English, Stephen English, H. C. Ashton, John Myrick, Ann Gray, S. O. Pennington, William Snider and W. Watson Surveys. Three wet gassers are on the acreage. It is expected the new owners will start a drilling program soon.

A new outpost, two miles southwest of Travis Peak and Glen Rose wet gas production in the Waskom field, Harrison County, Texas, is planned by Arkansas-Louisiana Gas Company which has completed unitization of 315 acres for the test in and around the Benjamin Long, W. H. Adams, J. L. White and S. C. Dickenson Surveys. This same company prepared to make production test in this field at Speights 1, Simpson Holloway Survey. Total depth is 6150 feet.

Louisiana Permits

Twenty-nine drilling permits were issued last week by the Louisiana Conservation Commission, of which 15 were in North Louisiana, divided among the following parishes: Caddo 10, LaSalle 1, Lincoln 1, and Morehouse 1. The 14 in South Louisiana were in the following parishes: Acadia 1, Cameron 3, Evangeline 3, East Baton Rouge 1, Iberia 2, La Fourche 1, Jefferson Davis 1, St. Martin 1, and Terrebonne 1.

Arkansas

Three Magnolia Wells Testing; McKamie Test Nears Objective

Three tests in the Magnolia field, Columbia County, comprising all the active operations in that field, were at the testing stage last week. Placid Oil Company at Booth B-2, SW SW 20-17-19, southeast edge test, perforated casing set on bottom at 7670 feet. Electric log was run preparatory to setting final casing in Berkshire Oil Company's Couch 1, SE SE 22-17-20, which drilled to 7700 feet after cores from 7600 to 7672 feet, with 46 feet of recovery, showed water in top of the cores, then an oil stratum, and later water. Normandie Oil Company's C. E. Crumpler B-1, SE SE 18-17-19, prepared to perforate casing set at 7524 feet.

Production test was also ready at G. S. Hammond's Crone 1, SE SW 9-16-22, in the Buckner field, Columbia County, on a farmout from Standard Oil Company of Louisiana. Five and one-half inch casing was cemented at 7237 feet, 30 feet off bottom. It is the only active operation in this field.

In the McKamie deep gas/distillate field, Atlantic Refining Company's second test, Bodcaw Lumber Company 2, SW SE 29-17-23, LaFayette County, drilled below 8217 feet. This company's discovery well in the same section was completed at 9221 feet.

Two tests were drilling in the Dorcheat field, Columbia County, and one was drilling in the Fouke field, Miller County.

Arkansas Permits

One drilling permit was issued last week by the Arkansas Oil & Gas Commission. Union County — Marine Oil Company's Simmons 4, NW NE NW 10-18-13.

A Word About Orientation

We can't see that a guide from Minnesota would be much help in fitting out a South-Louisiana duck hunt. It takes an Eskimo to build an igloo and a river man to build a dugout. So we've never gone too far afield with supply service. We sell only what it takes for successful oil men to get the job done where we do business. Nothing we stock is recommended for use or offered for sale because of an overstock elsewhere.

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Magnolia

Mississippi

Tinsley Adds Six Oil Wells; 53 Geophysical Units Active

The Tinsley Dome field, Yazoo County, which celebrated its first anniversary August 29, added six producers in one of the largest weeks it has had this summer. Two new locations were announced in the field.

Fifty-three geophysical units worked in Mississippi last week of which 24 were in Southeast Mississippi, an area beginning to see renewed geophysical activity as a result of leasing activity in southwest Alabama. Counties in Southeast Mississippi in which the units were located are: George, Greene, Jackson, Jones, Perry, Stone and Wayne. Across the line in Alabama, Humble Oil & Refining Company continued to lease in Baldwin, Washington, Mobile, Escambia, Coneuch, Covington and Geneva counties.

Greer and associates, Shreveport, who two years ago assembled a block in Clarke County, west central Alabama, near Salitpa where the late Joe Modisett drilled a shallow test in Section 9-7n-1e, recently have been leasing additional acreage adjoining this block.

S. A. Moore, of Charleston, West Virginia, is taking bids for a 4000-foot wildcat to be drilled in Pickens County, Alabama, three miles east of Pickensville. In Henry County, Alabama, Paul McBride has leased 16,000 acres in 6n-29e, 7n-29e, 6n-30e and 7n-30e, with a drilling obligation effective November 1.

Two wildcat locations were made in Mississippi, both in Attala County. There were two wildcat abandonments, one in Holmes County and the other in Yazoo County, the latter six miles northwest of Tinsley Dome production.

British American Oil Company has placed on record leases on 11,000 acres in 11n-7e, Sharkey County, in the Mississippi delta. E. L. Martin was drilling below 9809 feet in Newell Mineral Lease 1, NE NE 5-6n-7e, wildcat test in Scott County, Mississippi. With elevation of 443 feet, this test topped Wilcox at 1131 feet, Midway at 3116 feet, Selma at 3780 feet, Eutaw (Blossom) at 4879 feet and Tuscaloosa (Woodbine) at 5283 feet.

Tom Daly et al abandoned a Mobile County, Alabama, wildcat test, Fort 1, NW SE SE 2-6s-4w, in chalk at 6518 feet.

After drilling to 6227 feet in the Tuscaloosa (Woodbine), Union Producing Company's Powell 1, SE SW 36-11n-3w, on the north side of the Tinsley Dome field, showed possibilities of producing in the Tuscaloosa at 6021-31 feet and 6114-21 feet, and cemented 7-inch casing at 6222 feet, using 350 sacks. Fifty-five cores were taken in this test.

Rocky Mountain States

Wyoming Depth Record Broken As Test Runs Liner

Deep drilling records in Wyoming were broken by the state's second well to go below 10,000 feet. Resolute Oil Corporation's State 2, CSW SW 16-57n-101w, in the Badger Basin field, Park County, an old producing well in the field, resumed drilling this summer and has been carried to 10,121 feet, surpassing the former deep hole mark for the state established in 1939 by The California Company when it drilled to 10,003 feet in its Pinedale wildcat.

The Badger Basin field, producing from the Frontier formations at around 8500 feet, is the deepest commercial area in the Rocky Mountain district, but prior to the present deep test had not been drilled below the Frontier levels for deeper testing. The present well logged saturation in what is believed to be the Dakota formations at 10,105 feet, and has run liner for a production test.

The only active well in the Frannie field, Park County, Valentine M. Kirk's No. 3, SW NW SW 24-58n-98w, tested 350 barrels of oil on natural flow when drilled in at 3023 feet in the Tensleep sands. On the northern end of the field, in Carbon County, Southern Montana, Continental Oil Company's Prigge 1, SE SE SE 33-9s-25e, topped the Chugwater red beds at 3030 feet and was drilling in the formation at 3077 feet.

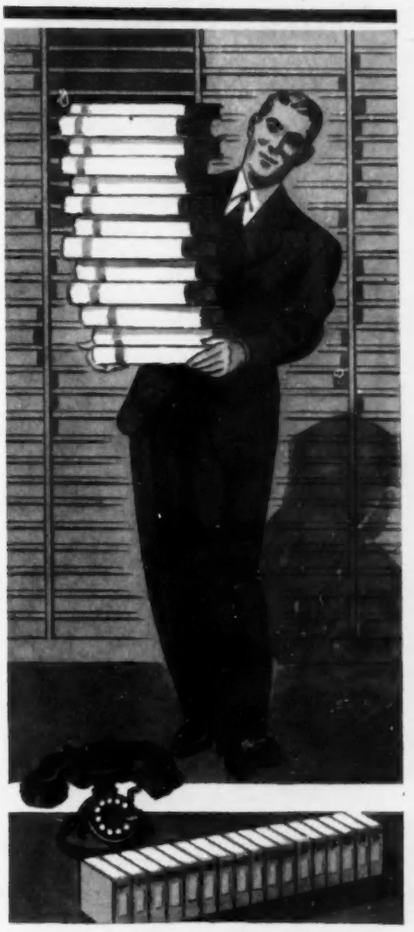
The Ohio Oil Company was preparing for a production test in Anna Davis 3, NW SW NW 34-56n-97w, in the Garland field, Big Horn County, Northern Wyoming, bottomed in saturated Madison lime at 4224 feet. A test being drilled with standard equipment on the western flank of the Garland field, Kinney-Coastal Oil Company's Government 4, SE SW 13-56n-98w, was below 700 feet.

Saturated cores were reported recovered from Sundance sand in Gus Pongratz Clark 1, NE NE NE 22-19n-104w, deep test well going down in the North Baxter Basin field, Sweetwater County, Southwest Wyoming. The test drilled to 3807 feet in the sand, and will test the formation before deepening. Operators announced it will be carried to the Tensleep formations for a complete check on the oil producing possibilities of the gas pool.

The South Baxter Basin test being drilled by Union Gas Company has been taken over by A. B. Cobb, who is installing rotary equipment to deepen from 2110 feet.

In the Middle Baxter Basin field, Sweetwater County, Red Desert Corporation's Edith Aspden 1, CNW SW NW 34-18n-103w, was coring below 3990 feet in the Sundance sand.

Arro Oil Company started work on a new test to be drilled on the Mosby Dome of the Cat Creek oil field in Garfield County, Montana. Drilling below 500 feet with rotary tools, it is Charles 1, SE NW 21-15n-30e. Hole is being put down by Newell & Chandler, contractors.



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California

Los Angeles County Wildcat Indicates Good Oil Well

First important addition to crude oil reserves in California in more than a year appeared in prospect as R. E. Havenstrite's wildcat in the Newhall district of Los Angeles County continued to core oil sand. The test, Lincoln 1, Section 16-4-17, was coring at 6865 feet in oil sand, and operator planned to continue coring for an additional 40 to 50 feet before setting water string preparatory to a production test.

From 6680 feet to present bottom, an interval of 185 feet, coring has been through practically solid rich oil sand of good porosity, with an occasional thin bed of shale. The zone is believed to correspond to the third zone in the Newhall-Potrero field discovered by Barnsdall Oil Company several years ago. It is in the Modelo section of the Upper Miocene, which in this district carries sand sections of thicknesses ranging upwards to 2500 feet. In the Newhall-Potrero field, Barnsdall Oil Company has cored as much as 1000 feet of productive formation, taking in the first, second and third zones. Operator plans to set the water string at about 6650 feet and try to complete. Top of the lower Pico was drilled at approximately 5245 feet, and top of the Miocene at 5750 feet.

Within the past week, Shell Oil Company has added 3387 barrels daily to its potential production through completion of four wells, two in the Ten Sections field, and one each at Dominguez and Ventura Avenue fields. The company is currently operating eight strings of tools over the state. Ten Sections completions included KCL-A21-29 for 1632 barrels daily, and KCL-A81-30 for 1145 barrels daily. Reyes 108 at Dominguez was completed at 200 barrels daily, and Taylor 121 at Ventura established initial potential of 410 barrels daily.

Trico Oil & Gas Company was preparing to spud in a second test in the Round Mountain area of Kern County, Section 8-28-29, following failure of its Coffee 2 test to make a producer. The No. 2 was abandoned after being taken to 1392 feet, and electric log indicated gray Vedder zone at 1180 feet. The test appeared to be across one member of the Kern Gorge fault, and a second attempt at production will be made at a greater distance from the fault zone.

Crestmont Oil Company was building rig for a wildcat in the northwest Dominion area of Kern County, Smith 1, Section 11-26-27, two miles northwest of the producing Dominion area, and in the same section in which Superior Oil Company drilled an unsuccessful test several years ago.

Michigan

Shallow Traverse Lime Yields Three Strikes

Shallow Traverse-lime horizons in the southwest part of the state accounted for two small wildcat producers and a semi-wildcat producer which should aid the now slipping shallow-area development.

Fisher-McCall, Inc.'s Van Single 1, NW NE NW 2-6n-13w, Ottawa County, a mile southeast of producing wells but rated as wildcat because of the spotted history of the district, pumped from 20 to 40 barrels natural on first tests from Traverse at 1792 feet.

Alfred R. Urion's Antonson 1, Section 34-1n-16w, Case Township, Allegan County, a rank wildcat, was rated a 10-barrel pumper after acid in Traverse at 1115 feet.

Walter L. McClanahan's Hoffman 1, SW SW SE 16-4n-14w, Overisel Township, Allegan County, about midway between two pools previously separated by 1¾ miles of undeveloped territory, flowed 300 barrels after acid from Traverse at 1557 feet. Despite the spotty conditions which have been found in Overisel in the past, McClanahan's well is expected to bring more immediate drilling action than either of the other two shallow wildcat producers.

Stewart Oil Company has junked Vugteveen 1, wildcat in Section 25-7n-15w, Ottawa County, after deepening from an old abandonment depth of 1680 feet to 2090 feet. Test was dry in Traverse, the original objective, topped at 1646 feet, did not show commercially in the Monroe, but carried some saturation at 2052 feet in the Monroe. To date, the Traverse is the only commercial zone drilled in Southwest Michigan.

Sun Oil Company raised 5-inch casing and cemented after gravel packing the Monroe-lime pay in McKenna 1, Section 15-19n-3w, Clare County, Hamilton field discovery. Operators reported that the packer, with which the producing string was originally set, had been damaged and was letting Traverse water in on the Monroe pay at 3753 feet. McKenna 1 originally flowed as high as 1503 barrels natural, but early last week, before 5-inch was cemented, had dropped to 190 barrels on the pump. The company has started three tests in Hamilton, and two independent operations have been spudded.

Although none of the 10 follow-up tests to Rayburn & Majors' Yenior extension producer in Adams Township, Arenac County, had been completed last week, the first to reach the objective Dundee lime was 29 feet lower on the formation than the discovery. It was Smith Petroleum Company's Stone 1, Section 14-19n-3e, ½ mile northeast of Yenior 1.

Sun Oil Company's Cameron 2, Section 10-18n-2w, Gladwin County, 660 feet south of same company's Cameron 1 discovery, a 15-barrel pumper, was under test after acid treatment, with an estimated production of 18 to 25 barrels per day. Both wells were producing from the 3839-foot Dundee section.

UNITED STATES WELL COMPLETIONS

Alabama

Mobile County (Wildcat)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Tom Daly, Tr. et al, Fort 1, 2-6s-4w	*	6518

Arkansas

Union County (Urbana)—

Company, Well and Location	Init. Prod. Bbls.	Depth
McCreslenn Oil Corp., Hadley 4, 3-18-13	15	3585

California

Fresno County (East Coalinga Eocene)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Robert S. Lytle, No. 84-18F	2108	8172

Kern County (Kern Front)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Macdonald & Dearin, No. 6	No Est	1830

Kern County (Midway-Sunset)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Robert A. Foster, Hollingsworth 1	63	2577
Signal O&G Co., Kendon 8	158	2468
Texas Co., No. 41	72	3170

Kern County (Rio Bravo)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Superior Oil Co., Mandell 1	1560	11447
Riggs 1	*	12324
Union Oil Co., Kernco 67-34	1461	11447

Kern County (Round Mountain)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Cresmont Oil Co., Stanley 7	300	1562
F. D. Goody, Olcese 9-9	*	2023
D. G. Vedder, California lands 1	*	1801

Los Angeles County (West Coyote)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Standard Oil Co., Emery 70	105	4206

Los Angeles County (Long Beach)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Dormax Oil Co., Dormax 2	100	5340

Los Angeles County (Montebello)—

Company, Well and Location	Init. Prod. Bbls.	Depth
S. M. Brooks Dr. Co., Dutch 1	275	7715
Standard Oil Co., Whitehead 6	37	7790

Los Angeles County (Potrero)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Basin Oil Co., Potrero 8	310	3693

Los Angeles County (Rosecrans-Athens)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Mission Oil Co., Pierce 1	¶1.0	8546

Los Angeles County (San Fernando)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Continental Oil, Howell 2	*	5422

Los Angeles County (Wilmington)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Continental Corp., LACFCD-13	No Est	3140
Hamarson Oil Co., No. 2	160	2424
L. A. Basin Dr. Co., No. 9	140	3570
Long Beach Oil Dev. Co., W-16	1187	4020
Union Pacific RR. Co., UP-E-27	616	3632

Santa Barbara County (Elwood)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Texas Co., Bishop A-1	*	4350

Santa Barbara County (Santa Maria Valley)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Union Oil Co., Mallory 3	56	5440

Ventura County (Ojai)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Norwood Oil Co., Coronet 1	50	2697

Ventura County (Sespe)—

Company, Well and Location	Init. Prod. Bbls.	Depth
J. A. English, Lankershim No. 3	150	3285

Ventura County (Ventura Avenue)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Shell Oil, Taylor 121	347	7365

Illinois

Bond County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Ellis Jones, Foster 1, nw ne sw ne 30-4n-3w	*	912
Max Pray, Buchanan 1, swc nw sw 2-6n-2w	*	1053
Magnolia, Elam 1, sw sw sw 3-6n-2w	26	1033
Grigg 1, ne ne ne 9-6n-2w	70	1036
Nat'l Pet. Co., Spindler Invest. 2, sw ne nw nw 10-6n-2w	223	1023

Clinton County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Thompson Dr. Co., Joliff Scholl 1, sw 1-1n-1w	66	1220
Ames, Hicks 2, lot 10, blk 5, 12-1n-1w	74	4121
Blalock Dr. Co., Brameier 3, sec nw sw 2-1n-2w	*	1375
L. L. Benoist, Knolhoff 6, ne nw ne nw 11-1n-2w	60	1323
Max Pray, Monken 2, nw ne sw nw 11-1n-2w	50	1327

Coles County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Carter, Pinnell 1, cw½ sw se 26-12n-7e	*	2107

Edwards County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Superior, Works 3, se nw sw 18-2s-11e	600	3084
Works 4, sw se sw 18-2s-11e	648	3087

Fayette County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Ohio, Williams 9, nw sw se 36-6n-2e	80	1619
Texas, Neathery 10, sw sw ne 6-6n-3e	57	1587
Lee Township Oil Co., Fredrick 1, nec se nw 10-7n-1e	*	815
Carter, Owen 1, s½ sw sw 8-7n-3e	282	1573
Owen 2, s½ sw sw 8-7n-3e	198	1579
Hawkins 7, se ne sw 17-7n-3e	30	1530
Wood 2, ne se nw 10-8n-3e	66	1534
Logue 2, nw ne sw 23-8n-3e	816	1570
Logue 4, se ne sw 23-8n-3e	360	1505
Baker 1, se ne se 35-9n-3e	120	1548
Luttrell et al, Tucker 1, nwc ne 21-7n-3e	100	1578

Franklin County—

Company, Well and Location	Init. Prod. Bbls.	Depth
E. S. Adkins, Old Ben Coal Co. 3, ne ne se 14-7s-3e	*	3102

Hamilton County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Shell, Beagle 3, cnw se se 6-6s-7e	214	2714
Texas, Davis 1, nw nw ne 7-6s-7e	80	2759
Ralph Halbert, Lockwood 1, ne ne nw 23-6s-5e	*	3257
Lane O. & G., Hood 1, se sw sw 34-5s-6e	*	3246

Jasper County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Pure, Aldridge 2, ce½ se sw 8-5n-10e	267	2806
Canny 1, cw½ nw se 17-5n-10e	795	2820

Jefferson County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Terrace Oil Co., Chesnek 1, se ne se 21-2s-1e	*	2279
Magnolia, Severs 2, sw se ne 22-2s-1e	*	2276

Lawrence County—

Company, Well and Location	Init. Prod. Bbls.	Depth
W. L. Dorsey, Vandermart 1, se sw nw 2-2n-12w	*	1834
Schmidt et al, Martin 1, w½ ne se 5-2n-12w	*	2255

Macoupin County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Adams & Leagers, Cole 1, se nw ne 2-10n-6w	*	633
Lee & Cover, Banning 1, sw se ne sw 12-10n-6w	*	675
Peyton & McGraw, Friend 1, se ne nw 35-11n-6w	*	625

Madison County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Corbitt et al, Keller 1, sw ne se se 7-3n-8w	¶0.10	1276

Marion County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Jack Chevigney, Cook 1, cs½ sw ne 25-2n-6e	*	3277
I. D. Lain, Dempsey 14, swc ne sw 31-2n-2e	400	3472
Rockhill, Hanley 4, ne nw ne ne 28-2n-2e	85	1872
Magnolia, Young 113, se sw ne nw 28-2n-2e	82	3497
Shanafelt 38, se sw ne nw 21-2n-2e	220	2516
Texas, Reed 10, ne ne nw 5-1n-2e	310	2193
Richardson 16, se sw se nw 5-1n-2e	510	3452
Bundy 14, ne nw ne 6-1n-2e	350	3447
Johnson 8, se ne ne nw 6-1n-2e	237	3501
Johnson 22, nw se se ne 7-1n-2e	1660	3477
Johnson 23, nw sw se ne 7-1n-2e	1502	3469
Carr 9, e½ sw nw 8-1n-2e	1438	3500
Carr 10, w½ sw nw 8-1n-2e	1248	3487
Hawkins 21, ne nw 8-1n-2e	728	3488
Friedrich 18, sw se ne 8-1n-2e	140	1898
Canull 24, sw sw se 31-2n-2e	667	3420
Stroup 29, nec nw nw 31-2n-2e	675	3490
Stroup 30, se ne sw nw 31-2n-2e	205	3455
McConnoughhay 5, sw se se 32-2n-2e	361	2288
Easley 22, ne nw sw ne 33-2n-2e	435	3520
Tex Harvey, Kagy 13, ne nw se se 33-3n-2e	50	2044

Monroe County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Kreight & Walker, Kohlmer 5, nwc se nw 2-2s-10w	50	458

Montgomery County—

Company, Well and Location	Init. Prod. Bbls.	Depth
J. S. Brown, Lipe 1, sw sw se 28-10n-3w	*	2110
Shell, Langel 1, 172 ft w of sw sw nw 23-1s-1w	189	1547

[*Continued on next page*]

Summary of Drilling Operations in the United States, Week Ended August 31, 1940

	WELLS COMPLETED							*PERMITS FOR NEW WELLS				
	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1940	Total this Date 1939	This Week	Total this Month	Total 1940	Total this Date 1939	Year Total 1939
Alabama	1	.....	.....	1	.....	4	1	.....	.....	.....	.....	.....
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	1	1	.....	.....	15	125	166	1	10	97	157	223
California	28	22	1	5	9,255	763	712	14	88	717	700	1,174
Colorado	.....	.....	.....	.....	.....	5	15	.....	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Illinois*	92	65	2	25	21,486	2,684	2,548	65	404	3,025	.....	893
Indiana	11	4	3	4	870	304	125	.....	.....	.....	.....	.....
Kansas	45	30	5	10	65,941	1,322	935	42	197	1,369	1,030	1,583
Kentucky	8	3	.....	5	137	224	445	.....	.....	.....	.....	.....
Louisiana	31	27	1	3	6,563	1,134	698	29	135	1,071	902	1,449
Michigan	15	10	.....	5	1,030	834	966	20	101	764	952	1,419
Mississippi	7	5	.....	2	2,130	129	7	.....	.....	.....	.....	.....
Missouri	.....	.....	.....	.....	.....	13	.....	.....	4	4	.....	.....
Montana	.....	.....	.....	.....	.....	118	99	.....	1	1	.....	.....
Nebraska	.....	.....	.....	.....	.....	8	1	1	8	8	.....	.....
New Mexico*	4	2	.....	2	481	470	420	13	52	426	64	293
New York†	16	16	.....	.....	47	703	392	.....	.....	.....	.....	.....
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ohio	29	9	11	9	109	624	616	.....	.....	.....	.....	.....
Oklahoma	40	28	2	10	6,262	1,458	1,409	32	184	1,245	1,394	2,059
Pennsylvania†	72	59	8	5	58	2,385	1,071	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	8	.....	.....	.....	.....	.....	.....
Texas	174	127	9	38	71,456	7,002	6,568	158	833	7,768	7,058	10,269
Utah	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
West Virginia	10	1	7	2	5	372	354	.....	.....	294	417	718
Wyoming	3	3	.....	.....	4,102	97	94	.....	.....	.....	.....	.....
Total this week	587	412	49	126	189,947	20,790	17,630	375	2,017	16,789	12,673	20,080
Total last week	602	427	39	136	162,752	20,203	17,173	374	1,642	16,414	12,382	20,080
Total this year	20,790	15,167	1,139	4,484	7,510,130	.....	.....	.....	.....	.....	.....	.....

* This tabulation includes those states where weekly data are available; figures for Illinois date from October 15, 1939; New Mexico from August 1, 1939. Data for Kansas, Missouri, Montana, Nebraska and New Mexico are first reports of new wells, rather than actual permits.
† Includes water-input wells.

United States Well Completions—*Continued*

ILLINOIS—Continued

Perry County—
Stanolind, Kinzey 1, sw nw se 4-5s-1w ..... * 3185
Richland County—
Duncan Bros., Schilling 1, cs½ se ne 32-4n-9e 230 3002
Pure, Klinger 2, cw½ se ne 1-4n-9e. ¶5.0 2880
Glossbrenner 6, cw½ ne nw 31-5n-10e 120 2875
Kermicle 2, cw½ sw sw 32-5n-10e 246 2842
Saline County—
J. W. Rowe et al, Summers 1, sw sw sw 18-8s-6e ..... * 3142
St. Clair County—
Menne et al, Summers 1, nwc sw 13-1n-9w ..... * 465
Wabash County—
W. E. Hupp, Milligan 1, nw nw se 3-1n-13w 40 2724
J. G. McNeal, McGilton 1, sw ne ne se 4-1n-13w ..... * 2691
Tide Water, Seiler 1, nw nw nw 35-1s-13w 1152 2624
Washington County—
Shell, Brown 1, sw nw se 23-1s-1w. 33 1542
Magnolia, Rahn 2, ne sw nw 23-1s-1w 319 1553
Barczewski 6, ne se ne 15-3s-3w. 30 1268
Gill Est. 8, nw ne nw 26-3s-3w.... 55 1263
Wayne County—
B. W. Humphreys, Wagoner 2, sec sw sw 27-1s-7e ..... * 3337
Thompson Dr., Vaughn 4, nec nw 35-2s-8e 95 3434
Pure, Hesselton 2, cw½ se se 29-2n-8e 284 3090
Schofield 5, cw½ nw sw 33-2n-8e. 589 3080
White County—
Longhorn, Helm 2-A, ne sw nw ne 23-3s-14w 400 2864
New Penn, Whitlow 3, sw nw sw 28-3s-9e 168 3428
Buell & Herndon, Bond 1, cse se ne 8-4s-14w 105 2697
D & H Dr. Co., Hon 3, sw sw ne 9-4s-14w 41 2723
Superior, Fitton 4, ne se ne 27-4s-14w 240 2916
G. C. Ladas et al, Kershaw 1, se se se 3-4s-9e ..... * 3500
Sun, Garner 6, ne ne sw 1-5s-10e.. 351 3015
W. C. McBride, Green-Starr 2, se sw ne 25-6s-8e 4 2548
Exchange & Ohio, Pearce 2, se sw nw sw 12-6s-9e 160 2254
Eason Oil & Marshall, Pearce et al 1, ne se nw 2-7s-10e ..... * 2993
Williamson County—
Manellin, Baysinger 1, sw sw sw 32-10s-3w ..... * 2294

Indiana

Bartholomew County—
Haw-Creek Pet. Corp., Fishel 1, nw se ne ne 15-10n-7e ..... * 1466
Decatur County—
Westport Nat. Gas, Giddings 1, swc sw 5-8n-9e ..... ¶0.06 878
Hoosier Public Utility, Keeton 213, nw nw 14-9n-9e ..... ¶0.21 921
St. Paul Nat. O. & G., Mueller 4, se nw ne sw 3-11n-8e ..... ¶0.05 833
Floyd County—
Floyd County Dev., Sommerville 2, se sw 29-1s-5e ..... * 779
Gibson County—
K. T. & F. Oil & Dev., Schoultz 1, ne ne sw 18-1s-9w 13 1320
L. B. Jackson et al, Barthold 1, nw nw nw sw 23-2s-9w ..... * 3505
Lewis Production, Dunn 3, swc se sw 18-3s-13w 200 2094
Superior Oil, Mumford 4, se se se 29-3s-13w ..... * 2476
Papoose Oil Co., Cooper 9, nw nw sw 13-3s-14w 540 2856
Continental Oil, Mumford Realty Corp. 1, nw nw ne 25-3s-14w.... 117 2958

Kansas

Barber County—
Olson, Nuckolls "B" 1, cne ne 30-31-11w 943 4337
Barton County—
Cities Service, Bitter "A" 6, cs½ sw nw 5-16-13w 3000 3321
Phillips, Bitter 7, ce½ se ne 6-16-13w 3000 3337
Ohio et al, Bahr 1, cwl sw se ne 19-18-15w ..... ¶6.8 3509
Clay Bros. Dr. Co., Bahr 1, cw½ sw se 27-18-15w ..... ¶31 3510
Texas, Petz 2, cs½ ne se 7-20-11w. 3000 3298
Stanolind, Panning 22, cnw 11-20-11w 3000 3276
Butler County—
Adair & Morton, Sawyer 2, sw ne sw 10-28-7e ..... * 2778
Dickinson County—
Midland et al, Haines 1, se sw sw 23-16-4e ..... * 2411
Ellis County—
Dickey, Husted 3, cs½ ne sw 18-11-17w 3000 3360
Kollman 4, cs½ nw se 18-11-17w 120 3400
Cities Service, Colahan 15, nw sw sw 24-11-17w (otd 3666)..... 3000 3563
Colahan 17, nw sw ne 24-11-17w. 3000 3416
Bay, Barbier "A" 2, sw se ne nw 1-11-18w 3000 3586
Skelly, Kempe 6, cn½ se nw 12-11-18w 3000 3430
Ellsworth County—
Billings, Vanek 1, swc se 25-14-10w * 3129
Stanolind et al, Stoltenberg "D" 3, cw½ nw ne 27-16-10w..... 3000 3306
Lauck & Moncrief et al, Ehler 3, nw sec nw 35-16-10w..... 3000 3300
Gulf, Mehl 2, cs½ sw ne 18-17-9w. 3000 3265
Schroeder 4, nw nw se sw 20-17-9w 3000 3224
Grant County—
Panhandle-Eastern, McClaran 1, csw 15-29-36w ..... ¶14.0 2800
Greenwood County—
Dunkin, Frankhauser 1, ne nw ne sw 20-23-13e 15 1748
Reed et al, Axton 1, se se nw ne 17-28-11e (otd 775)..... 30 1223
Harvey County—
Shaffer, Saylor 1, cw½ sw sw 17-23-3w 590 3366
Westgate-Greenland, Graham 1, ce½ sw nw 31-23-3w..... * 3356
Haskell County—
United Producers, Harper 1, se sec nw 32-29-34w ..... ¶6.0 2715
Rooney 1, se sec nw 5-30-34w... ¶9.0 2720
Leavenworth County—
Kerlyn, Hemphill 1, nec nw 23-12-20e (otd 700)..... * 1046
Marion County—
McGinnis, Nybert 1, swc nw 29-17-4e * 2491
Schick 1, nwc sw 29-17-4e..... * 2515
McPherson County—
Central Petroleum et al, Swanson "B" 3, cw½ se nw 18-20-5w....2531 3352
Transwestern, Nelson 2, ce½ se ne 19-20-5w 3000 3387
Ohio, Peterson 3, cw½ ne sw 29-20-5w 24 3395
Carey, Knackstedt 2, cn½ se sw 30-20-5w 3000 3315
Pratt County—
Skelly, Miller 3, ce½ ne nw 36-27-11w 400 3502
Herndon et al, Montgomery 1, csl se ne sw 13-27-13w..... * 4423
Continental et al, Gibson 3, nw ne sw 24-18-8w (salt water disp.).. ... 3825
Rice County—
Garden et al, Hauschild 1, cw½ nw ne 23-21-7w ..... * 3775
Russell County—
Shields, Letsch 8, sw se se 27-14-13w 4056 2850
Skelly, Opdycke 12, cs½ ne nw 32-14-13w 1402 2977
Rein 4, cw½ sw sw 25-14-14w..2308 3006
Aylward, Holl 8, se nw sw 22-14-14w 3064 3109
Stearns et al, Olson "A" 4, cw½ sw nw 27-14-14w..... 2710 3070
Stafford County—
Stanolind, Richardson 1, ce½ ne nw 10-24-11w 835 3802
Ferris "A" 2, ce½ ne se 15-24-11w 1913 3829

Kentucky

Breckinridge County—
C. D. Lambert et al, Blair 1..... * 480
Daviess County—
Snyder & Stewart, Hansford 6.... 120 1516
Hancock County—
J. C. Ellis, Chaffin 1..... 12 332
Henderson County—
Joel Bailey et al, Eakins 1..... * 806
Ohio County—
A. Teller et al, Bell 1..... * 1088
C. S. Harmon et al, Stone 1..... * 335
Mote King, Davidson 1..... * 388
Sohio Prod. Co., Bedell 16..... * 347

South Louisiana

Charenton—
St. Mary's, Robischeaux 7..... 165 1151
Cheneyville—
Amerada, Weil 12..... 200 5797
Golden Meadows—
Brookshire, Authement 1..... 384 10,450
Gulf, Allen 1-A..... * 11,954
Marr & Vaughn, B&D Unit 2..... abnd lcn
O'Dwyer, LaFourche Realty 5..... 240 5503
Texas, LL&E 12..... 366 11,161
LaTerre 8 ..... 130 7800
Falgout 15 ..... 259 7940
Falgout 17 ..... 248 5175
Grand Lake—
Superior, State 15 ..... 285 8398
Iowa—
Magnolia, Wait 9..... 653 8239
New Iberia—
Lisbon-Iberia, Gulf Fee 9..... 380 3865
North Crowley—
Humble, Stokes 3..... 673 8862
Paradis—
Texas, LL&E 5..... 844 11,190
Sulphur—
Union Sulphur, Fee 870..... 163 6478
West Hackberry—
Stanolind, School Board 22..... 433 9866
Jefferson Davis Parish—
Cheesman & Cranston, Bourgeois 1, s flank Welch ..... * 5355
Acadia Parish—
Vincent & Welch, McManus 1, Richie ..... ¶3.0 3537

North Louisiana

Caddo Parish (Pine Island-Vivian)—
C. C. Bacheller, Stallcup 1-A, 34-22n-16w 70 2500
Caddo Parish (Pine Island)—
A. R. Hancock, Standard Oil Co., Fee 9, 18-21n-15w..... 50 1737
E. E. Johnson, Petroleum Dev. Corp. 1, 32-21n-15w 40 1540
Stanolind, Dillon Hrs 134, 13-21n-15w 100 1661
Texas Co., Hendon 10, 14-21n-15w. 15 1672
Claude Ferguson, Lane 1, 12-20n-16w 80 1550
Magnolia Pet. Co., Doan-Thigpen 24, 6-20n-15w 25 1504
Caddo Parish (Shreveport)—
Gerhig Co., Colored Methodist Church 1, 35-18n-14w..... 50 5626
La Salle Parish (Olla)—
Arkansas Fuel Oil Co., Kees A-1, 7-10n-3e 40 2252
Kees B-1, 7-10n-3e..... 160 2257
Placid Oil Co., La. General Lbr. Co. 24, 24-10n-2e..... 170 2430
La. Central Lbr. Co. 26, 25-10n-2e 340 2424

Michigan

Allegan County—
Alfred R. Urion, Antonson 1, se se se 34-1n-16w 10 1115
N. R. Dodd, Hazen 1, sw nw sw 11-3n-12w ..... * 685
Redmand et al, Poelakker 1, sw se nw 9-4n-14w 125 1476
James E. Flanigan, Wolters 1, nw ne se 15-4n-14w..... 20 1597
W. L. McClanahan, Hoffman 1, sw sw se 16-4n-14w..... 300 1557
Jacob Bolema, Voorhorst 2, ne nw se 34-4n-14w 50 1450
Barry County—
K. A. Fox, Winchester 1, nw sw sw 23-2n-9w ..... * 1875
Arenac County—
Basin Oil Co., Templin 4, sw nw se 23-19n-3e 50 2979
Isabella County—
J. V. Wicklund Dev., Eberhardt 1, ne se ne 1-16n-4w..... * 3815
Monroe County—
James S. Brailey, Roe 3, sw ne sw 30-6s-6e 240 2086
Ottawa County—
Fisher-McCall, Inc., Van Single 1, nw ne nw 2-6n-13w..... 30 1792
H. H. Heinig, Visscher 1, se ne ne 1-5n-16w ..... * 1567
Geo. L. Kernodle, Stel 1, nw ne ne 23-7n-13w 100 1877
Tuscola County—
Norman Carr, Boyce A1, se nw sw 24-14n-7e 125 3445
Van Buren County—
Smith Pet. Co., Mele 1, nw nw nw 27-1s-16w ..... * 1058

Mississippi

Holmes County (Wildcat)—
Lionel A. Hawkins, Humphreys 1, 33-13n-2e ..... * 4908
Yazoo County (Wildcat)—
Rowan, Hope & Thompson, Cook 1, 6-11n-3e ..... * 5057
Yazoo County (Tinsley Dome)—
Hassie Hunt, Lammons B-3, 36-11n-3w 200 5570
Jones & O'Brien, Stevens C-13, 11-10-3w 200 4813
Magnolia, Milner 1, 7-10n-2w..... 500 4887
Union Prod. Co., Adock Unit 1, 24-10n-3w 270 4965
Twiner 5, 1-10n-3w..... 960 5459

New Mexico

Eddy County (Wildcats)—
Everst & Moran, Ramoz 1, cne nw 18-23s-26e ..... * 1808
Sanders Bros. et al, Miller 1, cne ne 31-19s-31e ..... * 2396
Lea County (Maljamar)—
Barney Cockburn et al, Baish 16-B, cse nw 28-17s-32e 264 3810
Lea County (Vacuum)—
Magnolia, State-Bridges 73, csw ne 13-17s-34e 217 4716

United States Well Completions—*Continued*

New York

Allegany County—

Company, Well and Location	Init. Prod. Bbls.	Depth
R. B. Moore No. 6, Daniels farm, Bolivar	6	1369
D. V. McCarthy, Holcomb farm, Bolivar	6	1272
Richardson Pet. Corp., Towner farm, Scio	9	1136
Marsh Oil Co., Dernan farm, Greenwood (Steuben County)	6	1366
Mark Rogers, Fee, Willing	3	1059
H. W. Patterson, Coyle farm, Amity	7	843
Reeland Oil Co., Swarthout farm, Genesee	4	1360
Cam Oil Co., Peavy farm, Genesee	6	1384
Water Intake Wells—		
A. D. Reeland et al, So. Penn Oil Co. farm, Genesee	...	1345
Messer Oil Corp., Courtney Hollow farm, Genesee	...	1344
Trio Oil Co., Fee, Bolivar	...	1379
R. B. Moore No. 6, Daniels farm, Bolivar	...	1376
Dick Oil Co., Cameron farm, Bolivar	...	1424
Bradley Prod. Corp., Monder farm, Alma	...	1340
L. H. Thornton et al, Brown farm, Alma	...	1367
H. W. Patterson, Fuller-Ockerman farms, Amity	...	784

Ohio

Athens County—

Gibson O. & G. Co., Van Dyke 8	10	465
Bern Co., Wogan 1	¶0.09	1475
Townsend, Douglas 3	¶0.09	1566
Tom Orndoff, Howard 2	¶0.06	1449
C. W. Nuzum, Swisher 1	*	1296
Cooper & Lamb, Ackley 1	*	1320
Ohio Fuel Gas, Sunday Creek Coal Co. 185	*	1155
Fairfield County—		
Lancaster City, Brooks 1	¶0.01	2201
Guernsey County—		
Walker & Anderson, Cunningham 1	*	441
Holmes County—		
Ohio Fuel Gas, Homer 1	¶0.75	3381
Knox County—		
Johnson et al, Butterfield 1	¶2.34	2607
C. A. Davis et al, Miller 1	*	2365
Licking County—		
McClay Bros., Porter 7	50	3055
Shrider et al, McKinney 4	1	522
Ohio Fuel Gas, Oatman 1	¶1.0	2216
Medina County—		
Marine Trus, Ross 7-A	5	415
Ross 8-A	5	416
Meigs County—		
Roush Bros., Roush 1	¶0.25	3191
Monroe County—		
Lucas & Thornberry, Young 1	25	1225
Morgan County—		
Crowley, Bowman 1	1	1215
Noble County—		
Yoker Valley, Perkins 1	¶0.25	1614
S. L. Skinner et al, Hughes 3	*	990
Perry County—		
N. L. Altier & Sons, Gristi 1	10	1115
Ohio Fuel Gas, Hanby 1	¶2.27	2692
Stark County—		
White Est., Kamp 1	*	4630
Tuscarawas County—		
East Ohio Gas, North American Refractories Co. 1	¶4.0	4780
Washington County—		
Campbell, Cundry 1	2	1798
McTaggart et al, Turner 1	*	1591
Columbian Carbon Co., Stottar 1	*	3991

Oklahoma

Atoka County—

Thompson Bros., Richardson 1, ne se sw 10-3s-9e	*	2401
Bryan County—		
Pure, Steward 1 (103), cs½ se ne 28-5s-7e	597	5090
Carter County—		
Batson, Walker 2, ne nw sw ne 20-4s-2w	168	1985
Cleveland County—		
Hollenback, McAllister 1, nwc se 30-9n-1w	*	250
Cotton County—		
Mohican Dr Co., Boydstein 1, nwc ne 9-5s-9w	*	2466
Creek County—		
Strozier, Bierly 11, nwc sw 12-16n-11e	*	1805
Jackson, Hope 1-A, nwc sw 3-17n-9e	7	2083
Peppis, Land 5-A, sw ne nw 12-18n-11e	5	1413
Hughes County—		
Loual Dr. Co., Jackson 1, csw ne 24-9n-9e	¶4	2575
Kay County—		
Alma, Gasting 1, sec 14-27n-2e.	*	4062
Lincoln County—		
Mid-States, Provaznik 1, swc 33-12n-6e	217	3288
Berkey, Gregg 1, sec 32-12n-6e	337	3283
Magnolia, Ross 10, se ne se 2-14n-3e (otd 4470)	280	4015
Marshall County—		
Pure, Thomas 1 (102), sw ne nw 28-5s-7e	810	5091
Okfuskee County—		
McMann, Durkee 8, nw nw se se 2-10n-11e	14	1658
Fleming, McKinney 1-B, nw sw se 18-10n-11e	*	2184
Moffett Bros., Shawneego 2, nwc ne 25-10n-11e	25	2027
Wells et al, Scott 5, nw ne ne 25-10n-11e	17	2065
Titus, Sands 1, nec se 26-11n-8e	50	3097
Phillips, McMahon 1, nec nw 11-11n-10e	912	3200
Sinclair Prairie, Monarye 2, sw ne se 29-12n-10e (otd 3151)	17	2935
Oklahoma County—		
British-American, Johnson 1, nw nwc se 27-12n-3w (otd 6540)	800	6584
Sunray et al, State 8, se ne nw ne 27-12n-3w (otd 6417)	405	6539
Osage County—		
Franchot et al, 2, ne nec 2-21n-9e	14	1464
Magnolia, Butts 5, sw ne sw 14-26n-6e	500	2910
Pawnee County—		
Watchorn, Miller 19, ne se ne sw 33-23n-3e	10	2703
Pontotoc County—		
Lake, Gray "B" 5, sec sw 25-5n-4e (otd 2620)	350	2650
Senora, Burke 1, swc se 25-5n-4e (otd 2641)	180	2668
Pine, Jeeter 2, se sw sw 26-5n-4e	15	2658
Pottawatomie County—		
Smith, Goodwin 1, sw ne ne 24-6n-4e	*	3038
Viersen, Masters 1, ne se se 27-6n-4e	17	3042
G. & M. Dr. Co., Rogers 2, ne sw sw 31-11n-4e	26	4494
Seminole County—		
Texas, Jefferson 4, sw ne ne 26-5n-7e (otd 3850)	250	4000
Grisso, Orwig 3, ne se se 15-6n-6e	¶10.7	2303
Sinclair Prairie, Micco 2, swc se 5-8n-6e (otd 4495)	129	3745
Moss et al, Gist 1, cs½ se ne 27-10n-6e	*	4354
McIntyre, Johnson 8, cw½ sw ne 10-10n-8e	*	1855
Tillman County—		
I. T. I. O., Copeland 2, cwl nw ne sw 1-3s-19w	85	3134
Wagoner County—		
Hallock et al, Denton 1, nw se sw 13-17n-15e	*	1080
Mullins, Lyons 1, nw se se 20-18n-17e	25	385

Pennsylvania

BRADFORD DISTRICT

Penn Valley Crude Oil Corp, Fee	2	....
Messer Oil Corp., Loop	1	....
Rice et al, Bell	1	....
Bradford Tr. Co., 26 wells	26	....
D. W. Dale No. 2, Bing 319	1	....
Melvin Towne Oil Co., Fee	2	....
Forest Oil Corp., 2 wells	2	....
Forest Pet. Corp., 2 wells	2	....
Niagara Oil Corp., 5 wells	5	....
Tapp, Gallets & Buffington, Trs., Fee	4	....
B. McCaffery et al, McCaffery	1	....

WATER INTAKE WELLS

Messer Oil Corp., Loop	...	....
R. E. Hungeville No. 2, Bing 299-300	...	....
Pine Run Oil Co., Bing 130-1-2-3-4-6, 2 wells	...	....
Forest Oil Corp.	...	....
Forest Pet. Corp., 2 wells	...	....
Niagara Oil Corp., 6 wells	...	....

MIDDLE DISTRICT

Porter Cunningham et al, Atwell	½	....
W. H. Master, B. B. Mimm	2	....
S. H. Elder & Co., Burgess	½	....
R. B. Moore No. 6, Daniels	1	....
Messer Oil Corp., Miles	1	....
Richardson Pet. Corp., Towner	1	....
Bradley Prod. Corp., Monder	1	....
Richart & Haskins, Simeon Smith	1	....
Marsh Oil Co., Withey	1	....
H. W. Patterson, Coyle & Whitney	1	....

BUTLER ARMSTRONG DISTRICT

T. W. Phillips G. & O. Co., McMillen	*	....
Dr. McCandless et al, Stering Hrs.	*	....
M. E. Anderson, Peebles	1	....

NEW YORK PENN GAS FIELD

Empire Gas & Fuel, Wilson	¶	....

SOUTHWEST PENNSYLVANIA

Armstrong County—

H. C. Judson et al, Watterson 1	¶0.09	3466
Greene County—		
Waynesboro Home G. Co., Elms 1	¶0.10	3383
O. I. Dille et al, Hughes 2	¶0.05	3720
Indiana County—		
T. W. Phillips G. & O. Co., Zimmerman 1	¶0.34	1661
Lewis 1	*	3375
Washington County—		
Chivers et al, Syseck 1	¶0.89	1101
Equitable Gas, Watkins 1	*	3025
Westmoreland County—		
Peoples Nat. G. Co., McLaughlin 1	¶0.09	3712
Kiski Valley G., Wolford 1	¶	4050
McBriar 1	*	3675

Texas Panhandle

Carson County—

L. R. Hagy-Harrington-Marsh, Haiduk 1	¶33.6	2714
Gray County—		
I. T. I. O. Co., Smith 16	373	3275
Magnolia, Saunders 6-B	35	2954
Southern Pet. Explo. Co., Archer 4	72	3337
Stanolind, Hood 10	144	3164
Wilcox O&G Co., Combs-Worley 43	156	3058
Hutchinson County—		
J. E. Crosbie, Inc., Pitts 35	387	2835
Fraber-Hodges Corp., Ware 2	207	3053
J. M. Huber Pet. Co., Mayfield 1	¶3.3	3198
Stanolind, Watkins 15-B	365	2886
Harry Stekoll et al, Whittenburg 10-H	56	2811
Texas Co., Pond 30	519	3025
Quinn 14	560	3120
Moore County—		
Panhandle Eastern P. L. Co., Bennett 1-22	¶22.6	2870
Sneed 1-23	¶30.9	3000
Sneed 1-26	¶10.2	3100
Texoma Nat. G. Co., Coon 15-M	¶8.2	3236
Coon-Sneed 8-M	6.7	3288
Wheeler County—		
Hugaile Oil Co., Binkley 9	43	2275

North Texas

Archer County (Hull-Silk)—

Magnolia, Rutty 12-B	672	3769
Archer County (Mankins)—		
British-American O. P. Co., Wilson 3	824	4792
Archer County—		
Bert Ligon et al, White 8-E	10	468
A. P. Nicholson et al, Prideaux 6	7	652
Baylor County (Seymour)—		
British-American O. P. Co., England 1-A	*	2591
Cope 2	*	2673
Clay County (Halsell)—		
Bridwell Oil Co., Halsell 2-B	747	4738
Clay County—		
Gorman & Norwood, Taylor 1	*	1156
Jas. G. Horton et al, Brannon 1	*	1902
Johnson & S. S. Kouri, Taylor 1-A	9	297
Ted Norwood et al, Taylor 8	10	1142
Taylor 9	10	1143
Clay County (Wildcat)—		
Johnson & Kouri, Hunt Bros. 1	*	1363
Cooke County—		
Hudspeth et al, Truebenbach 9	22	891
Cooke County (Walnut Bend)—		
Sinclair Prairie, McGeorge 15	976	4124
Jack County (Wildcat)—		
B. F. Collie et al, Crowley 1	*	470
Montague County—		
Claymont Oil Co., Bouldin 3	10	810
Montague County (Benton-Holmes)—		
Mudge Oil Co., Custers 1	760	3470
Montague County (Ringgold)—		
Fain-McGaha Oil Corp., Spring 1	2760	5794
W. B. Omohundro et al, Seay 2	603	5680
Wichita County (K-M-A)—		
W. H. Hammon et al, Fee 4	664	4044
Hanlon & Buchanan, Fassett-Tuttle 20-G	440	4101
Ven-Mex Oil Co., Big Wichita River 13-A	1032	3810
Wichita County—		
W. H. Hammon et al, Fee 4-A	41	608
Wilbarger County (Wildcat)—		
Herbert Oil Co., Peters 1	*	5040
Young County—		
Jack Henry et al, Morrison 1	*	957
A. T. Strong et al, Craig 1	2160	4244
Henry Zweifel et al, Martin 1	857	4000
Young County (Wildcat)—		
Hill & Hill, Stewart 1	*	977

East Texas

Joiner Area—

Carmichael & Massad, Green 3	1200	3712
W. H. Gant-Garvin-Wegener, Moore 41 (134.24-ac)	208	3575
Kilgore Area—		
W. W. Bradley et al, Duncan 10 (40-ac)	360	3654
Duncan 11 (40-ac)	350	3637
Producers Inv. Corp., Crim 6 (4.2-ac)	600	3556
Sun Oil, Walker 5 (394.65-ac)	138	3729
Longview Area—		
B. F. Phillips et al, Lee 1 (1.23-ac)	1500	3577
Stanolind, McKinley Bros. 62-B (54.47-ac)	216	3583
Anderson County (Long Lake)—		
Alex McCutchin et al, Reagan 3	192	5386
Franklin County (Talco)—		
Texas Co., Barker 15	250	4287
Wood County (Wildcat)—		
Plains Prod. Co.-Hunter & Rowe, Smith 1	*	4661

United States Well Completions—*Continued*

South Texas

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bee County—		
R. E. McClung & Heyers, Heard & Clard, Claude E. Heard 1 (WC) Henry R. Eyles sur.	•	4815
Brooks County—		
West Prod. Co., Cage 1 (WC) sur 31	†	8518
Goliad County—		
J. K. Culton, Cole 1 (WC) blk 27, range 4	•	5582
Jackson County—		
Barnsdall, Pritchett 1 (WC) A. M. Clare League, ab 212	•	6510
Humble, Toney A-10 (West Ranch)	1200	5520
Magnolia, Four Way Ranch 2 (Lolita)	1100	5947
Hinshaw 2 (Lolita)	450	5928
West 95 (West Ranch)	1300	5774
Skelly Oil, Ward 2 (Lolita)	650	5935
Texas Co., Tunison et al 1 (Ganado)	90	5105
Jim Wells County—		
Arkansas Fuel Oil Co., McNeill 4 (Wade City)	70	4976
Sachteleban 2 (Wade City)	500	4925
Bridwell Oil Co., Hoffman 4-B (Ben Bolt)	750	5270
Henderson Coquat & Bill Quinn, Pundt 3 (Wade City)	350	4917
Nueces County—		
A. D. Corgey, Gallagher Est 1, (WC) sur 158	•	6630
Gulf Plains Corp., Texon Royalty Co. 1 (Stratton)	¶20 & 200	4827
Union Prod. Co., Sponberg 2-B (Agua Dulce)	¶65 & 250	7085
Wellington Oil Co. of Del., Richardson 6 (S. Clara Driscoll)	175	5774
Victoria County—		
Gulf Oil Corp., T. P. Traylor 39-B (Heyser)	375	5483
Sunray and Colton and Colton, Strake (Mahon) 3 (Telferner)	•	2758

LAREDO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Duval County—		
Continental Oil, Driscoll Est 54-A (Driscoll)	500	3335
Henderson Coquat, Hamilton 1 (WC) sur 125	•	4520
Sun, Weiderkehr 70 (Government Wells), new sand	35	3183
Jim Hogg County—		
Adams & Leferve, Allen 1 (Manila)	150	2626
C. Andrade III, Martinez (Trevino) 2-E (Colorado)	300	2969
V. F. Neuhaus, Martinez (Trevino) F-1 (Colorado)	900	2962
Starr County—		
W. R. Davis, Inc., Davenport 4-A (Rincon)	500	4170
Slick Est. 33-B (Rincon)	100	4465
P. R. Rutherford & K. D. Owen, Standard Trust Co. et al 2 (Boyle)	200	3508
Sun, Speer-State 3-B (Sun)	500	5132
Webb County—		
W. H. Holland and Jay Simmons, A. M. Bruni Est 1-B (Glen)	125	2185
Magnolia, Carlos Benavides 9 (West Cole)	•	2754
Pitkin and Goldston Oil Co., Bruni Est 1 (Glen)	68	2184
Bruni Est 2 (Glen)	145	2195

SAN ANTONIO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bastrop County—		
August C. Bering, Jr. et al, Rivers 1 (WC) B. Osborne sur.	•	2430
Bexar County—		
Leavitt Corning, Jr., Barker 1, sur 2	3½	380
Charles F. Herman, Zono Miller 1 (Somerset)	•	1425
Southwest Dr. Co., Covell 3 (Gas Ridge)	3	435
Williamson County—		
J. G. Hodges, Adamek 1 (WC) sur 35	•	1432

West Central Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Brown County—		
T. E. Berry et al, McGee 1	•	1601
Ed. Selvidge et al, Curry 1	•	1127
Callahan County—		
M. D. Heist et al, Grisham 1	•	502
Coleman County (Wildcat)—		
Anzac Oil Corp. et al, McCord 1	•	2885
Coleman County—		
Bradford & Robertson, Morris 2	768	3607
R. McKissick et al, Morris 4	125	3558
Jones County—		
Condor Pet. Co., Sayles 30	127	1936
J. E. Farrell et al, Mareska 1	178	2588
Lewis Prod. Co., Sayles 4-D	290	1942
Ungren-Frazier et al, Akard 2	•	2131
Shackelford County (Wildcat)—		
Roark et al, Nail 1	•	980
Shackelford County—		
Charter O. & G. Co., Bouldin 1	•	830
Fortex Oil Co., Dwyer 1	•	1244
G. C. Foster et al, Walker 1	•	408
Gillespie & Sharrock, Snyder 1-A	•	739
Gorsuch Oil Co., Gorsuch 6	•	1557
Humble, McCown 4	115	3210
Simpson 1	•	3246
Roark et al, Hickman 13	51	671
Roeser-Pendleton, Cook 10-A-113	168	1579
Cook 2-A-116	101	1596
Ungren-Frazier & Beams Dr. Co., Jackson 3	10	930
Stephens County—		
A. A. Horwitz-W. P. Oldom, Maury 4 (new pay)	1182	4713
Taylor County—		
Talvez Oil Co., Richards 2	1281	2414

West Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Means)—		
Humble, Means 16	520	4555
Andrews County (Wildcat)—		
T. P. Coal & Oil Co.-Seaboard, Midland Farms 1-A	•	4888
Brewster County (Wildcat)—		
J. W. Quinn, Tr., Stumberg 1	•	1065
Crane County (Gulf-McElroy)—		
Gulf, McElroy 223	917	2915
Crane County (Gulf-Waddell)—		
Gulf, Waddell 32	2131	3520
Cochran County (Duggan)—		
Osage Dr. Co., Blake 1 (95-ac)	394	5061
Ector County (Foster)—		
Atlantic Ref. Co., Henderson 14	1167	4245
Pegues 1	1461	4200
Humble, Henderson 6-B	957	4196
I.T.I.O. Co., Johnson 3-D	1030	4147
Sinclair Prairie, Johnson 3-B	601	4153
Ector County (North Goldsmith)—		
Oil Well Dr. Co., Cummins 1-D	316	4235
Ector County (Goldsmith)—		
Gulf, Goldsmith 302	1221	4251
Goldsmith 303	286	4180
Goldsmith 304	41	4214
Goldsmith 307	1067	4200
Phillips Pet.-Pure Oil, Cowden 101	1539	4152
Gaines County (Seminole)—		
Amerada Pet. Corp., Coffey 1	760	5265
Humble-T. P. Coal & Oil Co., Blakemore 1-B	671	5350
Osage Dr. Co., Brand-Humble 1	475	5323
Gaines County (Wasson)—		
Amon Carter et al, Wasson 3-D	1314	5045
Hockley County (Slaughter)—		
Texas Co., Slaughter 10	667	4985
Pecos County (Tobarg)—		
A. J. Rife et al, Tippett-Conoco 36	8	422
Runnels County (Beddo)—		
Art Tucker et al, King 1-B	79	2341
Scurry County (Sharon)—		
Mudge Oil Co., Holcomb 3	61	2490
Terry County (Slaughter)—		
Western States Gaso. Co., Frazier 4	1783	5021
Upton County (Gulf-McElroy)—		
Gulf, McElroy 225	3428	2818
Crier-McElroy 43	1533	2888
Ward County—		
Brandor Pet. Co., Brandenburg-Cities 4	185	2090
Gulf, Estes 137	1193	2695
Mid-Continent Pet. Corp., Sealy-Magnolia 9	188	3063
Winkler County (Keystone)—		
Falcon Co., McCutcheon 4-A	195	3673
Yoakum County (Wasson)—		
Aloco Oil Co., Miller-Texaco 11-A	669	5157
Willard-Texaco 8-C	1189	5207
Humble, Wootten 31	998	5130
Shell, Baumgart 12-D	1930	5176

Texas Gulf Coast

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Humble, Middleton	780	7225
Caplen—		
Sun, Cade 4	158	7573
Clear Lake—		
Humble, West Fee 51-C	513	5934
West Fee 54-C	519	5899
Esperson—		
General Crude, Sun 13-B	745	7310
Humble—		
Ogden Texas Fee 1	21	1767
Kubela—		
Texas, Tlustos 3	30	4594
Old Ocean—		
Stanolind, Schelle-Donovan 1	307	10,143
Rockland—		
Midwest, Boykin Heirs 4	•	1261
Segno—		
Gulf, Wing 39	480	8078
Humble, Kirby B-X-26	251	8188
Withers—		
Texas, Pierce C-76	448	5387
Harris County—		
Frazier, Griffith 4, Mt. Houston	¶1.2	4210
Humble, Furr 1, Green's Bayou	•	9510
Walker County—		
Du Pree's T.L.L.L. Co. 1-A, Lovelady	•	2908
Wharton County—		
Gulfboard, Poole 1, Lissie prospect	¶1.85	10,110

West Virginia

Company, Well and Location	Init. Prod. Bbls.	Depth
Boone County—		
Owens-Libby-Owens, Alley & Pryor 27	¶0.15	2300
Cabel County—		
Lusher et al, Gatewood Bros. 1	5	1196
Clay County—		
Reed-Wheeler-Young O. & G. Co., Goshorn Hrs. 23	¶0.03	2250
Gilmer County—		
Cabin Run, Riddle 2	¶0.15	2077
McCall Dr. Co., Napier 5	¶0.15	1813
Lincoln County—		
United Fuel Gas, Guyan Land Asso. 2093	•	2992
Pleasants County—		
E. S. Gilmore, Scadden et al 1	•	1869
Upshur County—		
Cumberland & Allegheny Co., Darnell 297	¶0.95	1639
Wetzel County—		
S. J. Brendel et al, Wells 2	¶0.19	3198
Wirt County—		
H. M. Burke, Showalter 3	¶0.07	1121

Wyoming

Company, Well and Location	Init. Prod. Bbls.	Depth
Natrona County (Salt Creek)—		
Stanolind, Unit 8-A, cnw ne 26-40n-79w	60	2957
Niobrara County (Lance Creek)—		
Ohio Oil, Rohlff 7, nw ne se 32-36n-65w	3792	5437
Park County (Oregon Basin)—		
Yale Pet. Co., Frisby 1-B, csw ne ne 31-52n-100w	250	3628

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WILDCAT REPORT
New Starts and Completions

ALABAMA
COMPLETION

Mobile County—Tom Daly, Tr., et al's Fort 1, se se 2-6s-4w, elev 98.5 ft, Vicksburg 2376 ft, Yazoo Clay 3093 ft, chalk 5794 ft, abnd 6518 ft, chalk.

CALIFORNIA
FIRST REPORTS

Kern County—Crestmont Oil Co.'s Smith 1, sec 11-26-27, rig, Mt. Poso area. Trico O&G Co.s' Coffee 2, sec 8-28-29, dr 1122 ft, Round Mountain area.

Los Angeles County—Aztec Oil Co.'s Sanborn 1, sec 6-3-16, lcn, Newhall area.

San Bernardino County—Belped Oil Co.'s Bannon 1, sec 32-2-8, rig, Carbon Canyon area.

San Luis Obispo County—Tex Harvey Oil Corp.'s Gilmore Community 1, sec 11-32-14, rig, Huasna area.

COMPLETIONS

Kern County—F. D. Goody's Olcese 9-9, sec 9-28-29, td 2023 ft, greenish gray sand and clay, Walker formation, abnd, Round Mountain area.

Los Angeles County—Continental's Howell 2, sec 34-3-16, td 5422 ft, silty shale, no showings, San Fernando area.

Santa Barbara County—Texas Co.'s Bishop A-1, sec 13-4-29, td 4350 ft, sand and shale, Sespe 3760 ft, abnd, Elwood area.

Ventura County—Norwood Oil Co.'s Coronet 1, sec 17-4-21, td 2697 ft, pumped 50 bbls daily 34-gr cutting 5 percent, extension, Ojai area. J. A. English's Lankershim 3, sec 13-4-19, td 3285 ft, pumped estimated 150 bbls daily, cut 50 percent, 36.4-gr, extension, Sespe area.

KANSAS
FIRST REPORTS

Ellsworth County—Duwe & Farris et al's Williams 1, cn½ nw se 18-17-8w, dr.

Russell County—Jones & Shelbourne et al's Lewis 1, swc ne 28-14-12w, dr.

COMPLETIONS

Barton County—Imo O. & G. Co.'s Eveleigh 1-A, cel sw ne 3-18-14w, 5 mi e Otis pool, Lansing 3126 ft, td 3390 ft in Arbuckle, 2000 gals acid 3135-50 ft, abnd 3335 ft.

Butler County—McDaniel et al's Eckel 1, nw ne nw 7-27-7e, 2½ mi n Knox pool, new field, Kansas City lime 2113 ft, td 2189 ft, 1000 gals acid, 40 bbls 36-gr. Jocelyn, Murfin et al's Hall 1, csl ne sw 7-29-7e, 3 mi e Snowden-McSweeney pool, base Mississippi 3160 ft, Arbuckle 3240 ft, hfw 3295-3305 ft, abnd 3320 ft.

Cowley County—McKnab et al's McKown 1, nec sw 31-33-5e, 6 mi nw Rahn pool, Mississippi 3122 ft, abnd 3245 ft.

Rice County—Duwe & Farris et al's Hutchins 1, cwl sw se 29-21-8w, 1 mi sw Sterling, Lansing 2972 ft, Sooy 3276 ft, Viola 3541 ft, Simpson 3631 ft, Arbuckle 3691 ft, td 3700 ft, abnd pb 3319 ft.

Russell County—Pryor & Lockhart et al's Davidson 1, ce½ ne nw 12-15-11w, 5 mi ne Davidson pool, Simpson 3276 ft, Arbuckle 3309 ft, hfw 3317 ft, abnd 3321 ft.

SOUTH LOUISIANA
COMPLETIONS

Acadia Parish—Vincent & Welch and E. J. Nicklos' McManus 1, discovery for Richie (East Tepetate) gas field, sec 21-7s-1w, acidized oil sand 3525-35 ft, 30 bbls daily 25-gr, 80 percent sw, perf 3528-33 ft, comp gas well 3,000,000 ft daily, tubing and casing pressures 1350 lbs.

Jefferson Davis Parish—D. C. Cheesman & Cranston's Bourgeois 1, s flank test Welch dome, gas/distillate sd 5301-15 ft, dst rec sw at 5315-55 ft, abnd 5355 ft.

NORTH LOUISIANA
FIRST REPORT

Lincoln Parish—C. H. Lyons et al's Dubach Lbr. Co. 1, nw sw nw 30-20n-3w, mat for Travis Peak test.

MICHIGAN
FIRST REPORTS

Allegan County—Dapar Oil Co.'s Miller 1, se sw sw 8-3n-12w, dr.

Cass County—Silver Creek Oil Co.'s Bakeman 1, ne sw sw 15-5s-6w, rig.

Kent County—Bell-Marks, Inc.'s Wolf 1, se sw nw 30-5n-12w, rig. Smith Pet. Co.'s Sterzick 1, ne ne sw 34-6n-9w, rig.

Mecosta County—Richard Erlewine, Tr.'s Sams 1, sw ne sw 9-13n-9w, dr.

Roscommon County—Wracco Syndicate's Wracco 1, ne nw nw 14-21n-4w, rig.

Van Buren County—Smith Pet. Co.'s Riemer 2, se se se 21-1s-16w, rig.

COMPLETIONS

Allegan County—Alfred R. Urion's Antonson 1, se se se 34-1n-16w, Traverse 1091 ft, td 1115 ft, 10 bbls on pump after acid, new field. N. R. Dodd's Hazen 1, sw nw sw 11-3n-12w, abnd 685 ft.

Barry County—K. A. Fox's Winchester 1, nw sw sw 23-2n-9w, abnd 1875 ft.

Isabella County—J. V. Wicklund Dev. Co.'s Eberhardt 1, ne se ne 1-16n-4w, Dundee 3740 ft, abnd 3815 ft.

Ottawa County—Fisher-McCall, Inc.'s Van Single 1, nw ne nw 2-6n-13w, Traverse 1771 ft, pay 1772-74 ft, 1786-91 ft, td 1792 ft, 30 bbls, new field. Hugh H. Heinig's Visscher 1, se ne ne 1-5n-16w, Traverse 1542 ft, abnd 1567 ft.

Van Buren County—Smith Pet. Co.'s Mele 1, nw nw nw 27-1s-16w, Traverse 1050 ft, abnd 1058 ft.

MISSISSIPPI
FIRST REPORTS

Attala County—Hawkins, Howell & Matthews' Weeks 1, nw nw sw 29-15n-6e, spd for 5000-ft test. T. B. Jones & Clint Crosby's John F. Allen 1, sw sw 33-13n-5e, sp for 4500-ft test.

COMPLETIONS

Holmes County—Lionel A. Hawkins' Humphreys 1, ne 33-13n-2e, elev 306 ft, abnd 4908 ft.

Yazoo County—Rowan, Hope & Thompson's Cook 1, sec 6-11n-3e, elev 226 ft, Midway 3160 ft, Clayton 3870 ft, chalk 3912 ft, abnd 5057 ft, Eutaw.

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NEBRASKA

FIRST REPORT

Nemaha County—Bow & Arrow Oil Co.'s Wrightsman 1, cw½ sw nw 36-6n-14e, mim.

NEW MEXICO

FIRST REPORTS

Chaves County—Roxana Oil Co.'s Franks 1, ne n 17-9s-25e, lcn; Louis Maull 1, sw ne n 1-12s-25e, lcn. H. Steinberger et al's Headley 1, cnw sw 26-14s-29e, machine.

COMPLETIONS

Eddy County—E. P. Moran & Everst's Ramuz 1, cne nw 18-23s-26e, elev 3417 ft, abnd 1808 ft. Sanders Bros. et al's Miller 1, cne ne 31-19s-31e, elev 3460 ft, abnd hf sul w 2396 ft.

OKLAHOMA

FIRST REPORTS

Kay County—Zephyr Dr. Co. et al's State 1, ne nw sw 13-26n-2w, dr.

Lincoln County—Kemp et al's Tanner 1-A, sec 28-17n-5e, dr.

Seminole County — Mid-Continent Pet. Corp.'s Porter 1, nw sw nw 12-7n-7e, dr.

COMPLETIONS

Lincoln County—Vierson O. & G. Co. et al's Bell 1, swc ne 5-14n-5e, West Davenport disc, Prue 3500 ft, td 3527 ft, 44 bbls 47.3-gr.

Hughes County—Walker et al's Hawthorne 1, swc se 19-7n-10e, 6 mi e Holdenville, abnd, 1110 ft. Ellison et al's Bird "A" 1, se ne se 4-9n-11e, old Alabama pool, Dense 3708 ft, Dolomite 3715 ft, first Wilcox 3760 ft, abnd 3826 ft. Scruggs Dr. Co. et al's Hamilton 1, c sw sw 7-9n-11e, 1 mi w Alabama pool, Booch sd 2155-89 ft, abnd 2215 ft.

Noble County—Helmerich & Payne et al's Fireshaker 1, sec ne 11-24-3e, 7 mi s Hardy pool, Simpson 3960 ft, Wilcox 3965 ft, Arbuckle 4158 ft, abnd 4184 ft.

Okfuskee County—Texas Co.'s Cowan 1, swc 5-11n-10e, North Okemah disc, Hunton 3646 ft, td 3916 ft in second Wilcox, pb 3719 ft, 1000 gals acid, 294 bbls 42.2-gr.

Okmulgee County—Sheridan Oil Co.'s Hayden 1, ne nw sw 4-15n-12e, N. Beggs district, Glen sd 1535-1700 ft, Viola 2599 ft, first Wilcox 2616 ft, abnd 2626 ft.

Payne County—Elson Oil Co. et al's Murphy 1, sec nw 20-19n-2e, West Stillwater disc, Hunton 4550 ft, td 4871 ft in second Wilcox, pb 4720 ft, 624 bbls 40.5-gr.

Pawnee County—Benedum & Trees et al's State 1, sw nw nw 13-21n-6e, 2 mi nw Greenup pool, Wilcox 3060-3116 ft, lime 3356-62 ft, 150 ft water in hole, abnd 3362 ft.

Pontotoc County—Kerlyn Oil Co.'s Chism 1, nw se se 24-5n-6e, ¾ mi n extension to West Francis pool, sd pay 1940-70 ft, td 2173 ft, pb 1972 ft, perf 1939-50 with 8 shots, 11,000,000 ft, gas.

Pottawatomie County—J. F. Smith et al's Brown 1, ne se ne 6-7n-4e, 1½ mi nw St. Louis pool, Romulus pool disc, Hunton 3957 ft, td 3993 ft, 265 bbls.

SOUTH TEXAS

FIRST REPORT

Bexar County—C. G. Bigsby's Brooks 1, 1464-ac tr, San Fernando Rodriguez gr, 12 mi s San Antonio, ½ mi se Mitchell Lake, lcn.

Duval County—George Boedecker et al's Gruy Est. 1, M. E. Gussett sur 394, 25 mi w Benavides, 1 mi w Rancho Solo fld, lcn. Glicrease Oil Co.'s Salazar 1-B, 40-ac "B" lse, C. Alanis sur 3, 1800 ft sw 1-A, lcn. Gus Tsesmelis et al's Rogers 1, A. C. Holmes sur 8, 4000 ft ne Bridwell fld, 10¾-in csg 325 ft, Pettus 4333 ft, td 4367, drill-stem test 4362-67 ft rec 7 stands sw, shut down for orders.

Gonzales County—Iron Mountain Oil Co.'s Norwood 1, Winslow Turner sur, 4 mi n Slayden, ru.

Jackson County—Pure's Spacek 1, 116.8-ac lse, William Menefee sur, 4000 ft sw Ganado, lcn.

Live Oak County—Clark Dr. Co.'s Odom 1, blk 30, R. Everett sur, 40-ac lse, 2 mi w Three Rivers, mir.

San Patricio County — Norsworthy Prod. Co.'s McDaniel Est 1, lot 2, blk 9, Rincon Road subd, Stanolind farmout, 3 mi ne Midway fld, 4 mi nw Gregory, 1 mi n McKamey 1, dr 3660 ft, Texon Royalty Co.'s Mullen 1, blk 1, sec 27, Fourth Subd Taft Farm Lands, lcn.

Webb County—Complete Oil Well Service Co.'s Hirsch 1, sur 247, 17 mi se Encinal, lcn. H & H Dr. Co.'s Bruni Est. 1, blk 11, Calvillo Ranch subd, Calvill pasture, J. V. Borrego gr, just s Reiser, ru. Marvin Walker's Yeager-Strohman, 130-ac lse, sh 5, Las Animas Aborego, Glen area, lcn.

Zapata County—Texas Co.'s Jennings 136, Blas Maria gr, 15,491-ac tr, lcn.

COMPLETIONS

Bastrop County—August C. Bering Jr. et al's Rivers 1, 80-ac lse out of 163-ac tr, B. Osborne sur, 9 mi sw Elgin, 6 mi sw Cardiff, Edwards 2348 ft, abnd 2430 ft.

Bee County—R. E. McClung and Heyser, Heard & Clardy's Heard 1, blk 6, Claude E. Heard O&G lse subd, Henry R. Eyles sur ab 23, 7000 ft e Phillips' Welder 2, 12 mi e Beeville, s Beeville-Refugio hwy, abnd 4815 ft.

Brooks County—West Prod. Co.'s Cage 1, GC and SF RR sur 31, ab 283, 6 mi se Falfurrias, junked 8518 ft.

Duval County—Henderson Coquat's Hamilton 1, J. Poitevent sur 125, 8 mi nw Benavides, 3 mi se Tarancahuas fld, Pettus 4377 ft, temp abnd 4520 ft. Sun's Weiderkehr 70, Government Wells fld, J. Poitevent sur 359, 3085-ac tr, td 3183 ft, comp 18.5 bbls daily, ⅛-in ch, 660 lbs tubing pressure, perf 2982-85 ft, gas/oil ratio 8325/1, new sd.

Goliad County—J. K. Culton's Cole 1, blk 27, range 4, Goliad Town Tr sur, ½ mi sw Goliad townsite, La Bahia area, temp abnd 5582 ft.

Jackson County—Barnsdall's Pritchett 1, s 200 ac of 400-ac tr, A. M. Clare league, ab 212, 6½ mi n LaWard, abnd 6510 ft.

Nueces County—A. D. Corgey's Gallagher Est. 1, 250-ac tr, City of San Antonio sur 158, 3710 ft nw Alamo Dr. Co.'s Guaranty Title & Trust Co. 1, 5 mi se Clarkwood, 8720 ft se Baldwin fld, temp abnd 6630 ft.

Williamson County—J. G. Hodges' Adamek 1, 89-ac tr, E. Reador sur 35, 6 mi s Taylor, Austin Chalk 670 ft, Edwards 1430 ft, abnd 1432 ft.

EAST TEXAS

COMPLETION

Wood County—Plains Prod. Co.-Hunter & Rowe's Smith 1, se c 300-ac tr, Santiago Calderon sur, elev 454 ft, Pecan chalk 2568-2751 ft, Austin chalk 4054-4188 ft, Sub-Clarksville 4214 ft, Woodbine series 4625 ft, abnd 4660½ ft.

WEST CENTRAL TEXAS

FIRST REPORT

Taylor County—B. A. Duffy et al's City of Abilene 1, S. Andrews sur 117, elev 2035 ft, dr 850 ft.

COMPLETIONS

Coleman County—Anzac Oil Corp. et al's McCord 1, BBB&C Ry. sec 703, elev 1835 ft, abnd 2885 ft.

Shackelford County—R. H. Roark et al's Nail Est. 1, se E. T. Ry. sec 23, abnd 980 ft.

Stephens County—A. A. Horwitz-W. P. Oldom's Maury 4, 315-ac lse, J. Koehler sur, elev 1181 ft (new producing level for Stribling pool and county), pb from 4713 ft and acidized 5000 gals through perforations opposite Mississippian saturation at 4446-4676 feet, flowed 197 bbls oil 4 hrs initial.

WEST TEXAS

FIRST REPORT

Dawson County—Sloan & Zook Co. et al's Sypert 1, sec T&P sec 22, blk 34, T-4-N, mim for 4500-ft test.

COMPLETIONS

Andrews County—T. P. Coal & Oil Co.-Seaboard Oil Co.'s Midland 1-A, se ne nw T&P sec 1, blk 40, T-1-N, elev 2954 ft, Cowden anhydrite 2720 ft, salt series 1980-2930 ft, Yates sand 2970 ft, frosted grains 3030 ft, solid lime 4540 ft, abnd 4388 ft.

Brewster County—J. W. Quinn, Tr. and R. C. McCarter's Stumberg 1, nwc se MK&T sec 70, blk G, abnd 1065 ft.

NORTH TEXAS

FIRST REPORT

Montague County—Seitz-Comegys & Seitz's Harris 1, swc ne¼ of s 160 ac of BBB&C Ry. sur A-88, ½ mi w Hardy, sp.

COMPLETIONS

Baylor County—Texas Co.'s Clement 1, sec TE&L Co. sec 3145, abnd 1541 ft.

Clay County—Johnson & S. S. Kouri's Hunt Bros. 1, blk 135, Byers subd, abnd 1362 ft.

Jack County—B. F. Collie et al's Crowley 1, nw G. S. Newman sur A-986, abnd 470 ft.

Wilbarger County—Herbert Oil Co.'s Peters 1, 654-ac lse, BBB&C sec 1, A-6, abnd 5040 ft.

Young County—Hill & Hill's Stewart 1, TE&L sec 1493, abnd 977 ft.

TEXAS GULF COAST

FIRST REPORTS

Hardin County—W. G. Christian's Guidry 1, M. Chavano sur, ab 163, lcn 7000-ft test.

Harris County—Cities Service's Keuhn 1, G. L. Bellows lg, 12 mi nw Houston, Hillendahl area, lcn 7800-ft test.

Matagorda County—Pan-American's Sisk 1-B, s flank Markahma dome, 2000 ft s prod, Atherton sur, ru 8100-ft test.

COMPLETIONS

Harris County—Frazier's Griffith 4, Mt. Houston area, A. Smith sur, completed gas well flwg 1,200,000 feet daily few bbls 26-gr oil 3482-86 ft, ¼-in choke, 350 pounds pressure, new field. Humble-Montgomery-Carter's Furr 1, Singleton sur, Green's Bayou prospect, 1½ mi n Penn City, Frio 5077 ft, Disc 4568 ft, Warr 7050 ft, Cock 9294 ft, Non-Cock 9323, elec log, abnd 9510 ft.

Walker County—E. J. Dupree's Texas Long Leaf Lumber Co. 1-A, Mary Millsaps sur, 6 mi s Lovelady, oil sd 2790-2800 ft, sw sd 2835 ft, swbd oil and gas 2916-26 ft, swbd fresh water 2676-94, 2680-94 ft, elec log, abnd 2908 ft.

Wharton County—Gulfboard's Poole 1, Lissie prospect, GH&H RR sur, ab 156, dr by Strake 10,110 ft, flowed oil and sw 9927-55 ft, pb by Gulfboard, perf 6728-34 ft Yegua, dst dry gas 1600 pounds, comp gas well 1,850,000 ft daily, 25 bbls dist, 5/32-in choke, tubing 2000 lbs, casing 2250 lbs, new field.

MEN IN THE INDUSTRY'S NEWS

ASA KING, former vice president in charge of production for Kingwood Oil Company, has been elected president to fill a vacancy caused by the recent death of Joe King. The company, organized in Oklahoma in 1914, has been one of Illinois' most active production companies and has been resposible for several pool-opening wells, as well as the discovery of Devonian production in the Lake Centralia-Salem field in Marion County.

WILLIAM G. SKELLY, president of Skelly Oil Company, Tulsa, and H. R. Straight, general manager of Cities Service Oil Company, Bartlesville, have been asked by the oil celebration committee to speak at the oil men's reunion to be held at El Dorado, Arkansas, September 27. A monument will be unveiled on the site of the discovery well of the El Dorado field, Cities Service Oil Company's Stapleton 1, CNE SE NE 29-25-5e, completed on October 12, 1915.

JAMES PARKER, Fort Worth division manager for Arrow Drilling Company, has moved company offices from the Neil P. Anderson building to the Sinclair building in connection with the removal of field office from Odessa, Texas. George Allen, formerly of Odessa, is office manager.

G. L. GRELSFORD, Tyler, Texas, has formed the Gerver Oil Company in association with Horace H. Durston, Fort Worth, Texas, and Veronica T. Hyland, New York City. The company has a capital stock of $125,000, and will have offices in the Citizens National Bank building, Tyler.

ARCH F. CAMPBELL, Tulsa branch manager for Waukesha Motor Company, and Miss Katherine Bowden, of Purcell, Oklahoma, were married recently. After a trip through Colorado, Wyoming and Montana, they are at home temporarily at the Trenton Terrace Apartments pending completion of their new home at 3115 South Rockford Drive.

DR. HAL P. BYBEE, chief geologist for the mineral lands department of the University of Texas, Austin, and Berte R. Haigh, Midland field geologist, have concluded an inspection tour of producing areas on University fee lands in West Texas.

RUSSELL C. CONKLING, West Texas consulting geologist, summarized his observations during a recent visit to Cuba in addressing the Midland Geological Society last week at Midland, Texas.

VAL R. WITTICH, JR., 30 Rockefeller Plaza, New York, has been appointed export representative for Miller Sand Pump Company, Oklahoma City.

BILL BROOKS, who recently joined Petroleum Equipment Company, Los Angeles, after several years as Los Angeles district purchasing agent for Standard Oil Company of California, will handle activities of the company in connection with distribution of boilers of Lucey Boiler & Manufacturing Corporation. George A. Nelson, factory sales representative for the boiler company, who had also been handling distribution, will continue as West Coast direct factory representative.

DR. ROBERT E. WILSON, president of Pan-American Petroleum & Transport Company and chairman of the petroleum section of the industry division of the Greater New York Fund, last week announced a gift of $216,432 contributed by the section to the fund. Firm contributions totaled $184,916, and employe gifts $31,516.

MERVYN ALECK ap RHYS PRYCE, 35, petroleum engineer who was active in Venezuela, United States and Trinidad fields, was killed recently while taking part in an air raid in France. He was a member of the Royal Air Force Volunteer Reserve, returning to England from Trinidad when war broke out a year ago.

CHARLES I. FRANCIS, member of the Houston law firm of Vinson, Elkins, Weems & Francis, last week was appointed special consultant on the defense program by Secretary of War Henry L. Stimson. Francis was a special assistant attorney general in 1933-34, and former attorney for the Petroleum Administrative Board in the Department of the Interior.

EMILL OTT, geologist of San Angelo, Texas, is president of the Three Widows Oil Company, recently organized to drill a wildcat in San Saba County, Texas. W. W. Gruber and R. P. Lynn, both of San Angelo, are vice president and secretary-treasurer, respectively.

WILLIAM B. HEROY, Pilgrim Exploration Company, will discuss "Recent Developments in the International Oil Situation" before the Gulf Coast Section of the American Institute of Mechanical & Metallurgical Engineers, meeting in the Lamar Hotel, Houston, September 3.

ROY EVANS, 49, operator active in California fields, died in Maricopa August 17 from injuries suffered a week earlier when he fell from a derrick floor. He had engaged in wildcat activity in Australia four years before returning to California recently.

ROSS W. THOMAS, Phillips Petroleum Company, has been elected president of Hydrocarbon Chemical & Rubber Company, recently organized by the oil company and B. F. Goodrich Company to manufacture the principal ingredients of synthetic rubber.

L. A. LONG, Graham, Texas, and C. A. Lupton and T. J. Brown, Jr., both of Fort Worth, have organized Bronlon Producing Company to develop joint holdings in Young County, North Texas.

PAUL K. GIFFIN, formerly with Lone Star Gas Company, has joined Southern Engine & Pump Company. He will make his headquarters at 3025 College Street, Fort Worth.

WILLIAM B. DE MARS, Illinois district scout for The Texas Company, has been named head of the Illinois scout check.

L. G. ROBINSON, California sales manager for Security Engineering Company, Whittier, California, has established his residence in Bakersfield where the company's district headquarters for the San Joaquin Valley is located. Robinson had served the company as manager of the district, transferring to Illinois as special factory representative, and later to Houston. He returned to California when the company established a district office in Houston. Jud Williamson continues as San Joaquin Valley manager.

R. T. GERMAN, West Texas field superintendent for Magnolia Petroleum Company, will transfer headquarters from Odessa to Brownfield upon completion of a 4-residence camp being erected by the company at the latter point. Company operations, currently involving 11 drilling tests in the north end of the district, will center upon Cochran, Hockley, Yoakum and Gaines counties for a year or more.

E. O. BENNETT, Continental Oil Company, will present a paper on "Trends and Observations in Pressure Maintenance Practice" before the East Texas Section of the American Institute of Mining & Metallurgical Engineers, meeting in Kilgore, September 10. A dinner, served in the Kilgore Hotel blue room at 7 p. m., will precede the meeting.

CARL W. FERREE, former sales supervisor under Frank Langham, manager of the Southwestern Division of Minneapolis-Moline Power Company, Minneapolis, has been named manager of the company's new Eastern sales division with headquarters at Columbus, Ohio.

GERALD WESTBY, head of Seismograph Service Corporation, Tulsa, has been named head of the Tulsa County Citizenship Council, Inc., currently conducting a campaign to register all first voters.

W. P. KNIGHT has taken over sales representation in the West Texas and New Mexico areas for the Kibele Manufacturing Company, Dallas. He will also continue representation of Rector Well Equipment Company, Fort Worth, maintaining his headquarters at Midland.

FRED PHELPS, Tulsa, has been named District geologist for Sunray Oil Company coincident with opening of Kansas district offices at Wichita. A. M. Wright, land man, is being transferred to the new office from San Antonio.

J. E. SIMCO, West Texas oil producer who is also sheriff of Upton County, has been chosen by the voters to uphold law and order in the country another two years.

C. B. CREEKMORE and C. J. Creekmore, of Creekmore Drilling Company, Tulsa, have opened a district office at Hutchinson, Kansas.

RALPH C. YOUNG, representative of Frick-Reid Supply Corporation, has been transferred from Tulsa to Wichita.

WILLIAM A. CLAIR, engineer for The Carter Oil Company at St. Elmo, Illinois, has been transferred to Tulsa.

Getting Salesmen's Co-operation

Tying in Advertising with Selling

Getting out into the field

Copy Testing

DIRECT MAIL

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contributing to the solution of general company problems

Readership of Publications

Measuring Results

ALLOCATION OF BUDGETS

Programs that management will approve

WHAT'S YOUR PROBLEM?

Your business . . . in at least one respect . . . is no different from others: *Your marketing problems are constantly changing.* You must ever be on the search for new ideas . . . for new ways to get results.

No doubt several of your immediate problems are indicated here . . . all of those shown will be threshed out at the 18th Annual Conference and Exposition of the National Industrial Advertisers Association, at the Hotel Statler, Detroit, September 18, 19, 20.

Plan now to get the up-to-the-minute facts on the latest ways to do a better industrial marketing and advertising job.

All Industrial Marketing Executives are Invited to this Conference

NIAA NATIONAL INDUSTRIAL ADVERTISERS ASS'N

1940 INDUSTRIAL ADVERTISING CONFERENCE

DETROIT . . . HOTEL STATLER . . . SEPTEMBER 18, 19, 20

NOTES FOR THE Equipment Buyer and User

Brake Lining

GATKE CORPORATION

Woven-moulded brake lining in sheets has been announced by Gatke Corporation, 228 North LaSalle Street, Chicago, to make available a brake lining and clutch facing material in widely varying dimensions.

Designated Makablok, the sheet stock is described as tightly woven of select long-fibre asbestos yarn and soft alloy wire, saturated with a high-heat-resisting frictional compound and compressed to great density and surface ground to uniform thickness. Brake liners and clutch facings can be sawed quickly and accurately to the required size from a sheet of correct thickness.

Makablok is furnished in rolled sheets 20 inches wide by 5 feet long, and in thicknesses of 3/16-, ¼-, 5/16-, ⅜- and ½-inch.

Meter

PITTSBURGH EQUITABLE METER COMPANY

A meter developed for measurement of liquefied petroleum gases, featuring a cast iron outer case to provide safety in measurement of highly volatile vapors, has been announced by Pittsburgh Equitable Meter Company, 400 North Lexington Avenue, Pittsburgh.

The meter features two relatively short sealing surfaces, effecting a seal by use of surface grinding and large-diameter screws. The index housing within the meter cover is without a stuffing box to seal the index shaft, a solderable, thick, high-strength glass providing a seal on the housing.

The drive shaft is mounted with its drive gear in an integrally designed movement box, providing a lubricated seal to prevent escape of gas should the index glass be broken. Diaphragms of special material described as particularly resistant to action of liquid hydrocarbons, or sheepskin treated to resist such action, are furnished.

Indexes reading in therms, decitherms, gallons, pounds or equivalent cubic feet are available on specification of the user.

Pumper

THE NATIONAL SUPPLY COMPANY

A new twin-crank pumper, designated Type TUS 464-HD46TB and designed for heavier requirements of medium pumping service, has been announced by The National Supply Company, Toledo, Ohio. It has a sub-base between the frame and the reduction gear to enable cranks and counter-weights to clear the derrick floor or a flat concrete pad.

Features include arc-welded construction; adaptability to either high-, medium-or slow-speed prime movers by means of reduction-gear ratio and variation in V-belt sheaves; a short frame base to which an extension base with slide rails for various types of prime movers is bolted, designed to simplify changes in the field; a tapered shaft including a locking device and a puller for easy removal to facilitate changing V-belt sheaves, and symetrical construction to prevent any tendency toward misalignment through unequal wear and distortion.

A. P. I. peak torque rating is 113,000 inch-pounds at 20 strokes per minute; reduction gear ratio is 29.6; A. P. I. safe load of walking beam is 15,100 pounds, and maximum polished rod stroke is 54 inches.

Regular equipment includes National Type B eccentric cranks and National disc-type counterweights, the latter the one-piece type locked in position on the outside rim of the crank. Adjustment is by power.

Emsco Meter

Truck

MACK TRUCKS, INC.

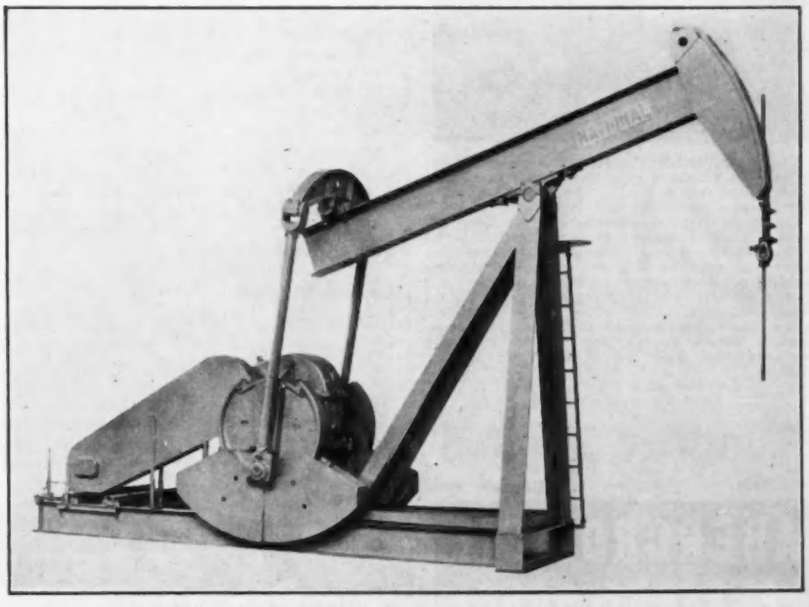
A new truck designed for heavy hauling, with standard wheelbase lengths of 176 and 194 inches, has been announced by Mack Trucks, Inc., Long Island City, New York. Special wheelbase lengths of 212 and 230 inches are available at extra charge.

The truck, designated Model LM, is powered by a 6-cylinder Model EO Mack Thermodyne engine with 4-3/8x-5-3/4-inch bore and stroke developing 142 horsepower at governed speed of 2200 revolutions per minute. Total piston displacement is 519 cubic inches, with a compression ratio of 5.4 to 1. Developed torque is 378-pound-feet at 1000 revolutions per minute. The truck is also offered with the larger Model EP Mack Thermodyne engine of 611-cubic-inch piston displacement, developing 160 horsepower at governed speed of 2100 revolutions per minute.

Of similar design, the engines have crankshafts with 7 main bearings of drop-forged, case-hardened, low-carbon steel. Cylinders are chrome-nickel alloy semi-steel heat-treated, and are cast in block with two detachable heads held down by 40 studs. Crankshafts, 3½ inches in diameter and weighing 182 pounds, have Lanchester-type vibration dampers.

Connecting rods are of drop-forged chrome molybdenum steel. Main bearings, of thin-shell precision type, are interchangeable and have a projected area of 40.25 square inches.

Drive is from a dry single-plate clutch 15 inches in diameter through a 5-speed transmission, offered with either overgear or direct fifth speed. Final drive is a dual reduction rear axle with a choice of five rear axle



National Supply Company's Type TUS 464-HD46TB Pumper

ACCURATE PRESSURE READINGS for MUD, WATER, OIL, AIR, GAS . . . or any Liquid.

The Abercrombie Pressure Gauge continues to become standard equipment with more and more operators, thanks to the many exclusive advantages provided, such as:

Extremely rugged construction for long life service . . . Dampens pump pulsations over entire pressure range without adjustments . . . Screws directly on line to be measured, employing no long copper tubes to fill up . . . Unaffected by external vibrations . . . Liquid being measured cannot enter gauge unit . . . Large scale figures and divisions give easy reading across derrick floor . . . Especially designed and built for drilling and similar service.

For full details refer to your 1940 Composite Catalog.

FLUID-PISTON FLUSH PUMPS
ABERCROMBIE PUMP CO.

Gulf Bldg. Houston, Tex.

ABERCROMBIE PRESSURE GAUGE

NOTES FOR THE Equipment Buyer and User

ratios: 6.46, 6.96, 7.54, 8.22 or 9.05. Brakes are mechanical air-operated, with total breaking area of 710 square inches.

Cellar Control Gate

SHAFFER TOOL WORKS

A new cellar control gate, designated Type 38, has been announced by Shaffer Tool Works, Brea, California. It is provided with Type 40 self-centering rams for closing around pipe, or with Type 40 rams for complete shut-off.

Shaffer's Cellar Control Gate

The self-centering rams are designed to center small drill pipe effectively in the bore of the gate. They are made with protruding angular guides, alternately top and bottom, and as the rams move toward their closed position, the guides engage the drill pipe and move it into central position in the ram. The guides telescope into the opposite ram block to permit the abutting faces to seal. Ram rubbers may be either rubber or neoprene.

The design of the gates permit effecting a seal against both the top and bottom inside faces of the gate body, or may be obtained with the seal against the top inside face only, and the bottom inside face provided with channels for sand drainage.

As the rams are moved to the closed position, the abutting rubber faces of the ram blocks are stopped. The ram-block holders continue their movement, and the circular band of rubber around the ram blocks is compressed by the inward movement of the ram block holders and thus extrude the band of rubber against the upper and lower inside faces of the gate body to form a seal around the pipe.

Speed Increasers

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylvania, has issued Booklet 3650 giving 24 pages descriptive of its line of Type SU speed increasers, designed to supply output speeds in excess of that which can be directly obtained with economy and safety from ordinary prime movers. The booklet presents application data, construction features, views and explanations of manufacturing processes employed, and four pages of tables and sketches giving complete dimension information, ordering instructions and pictures of successful applications.

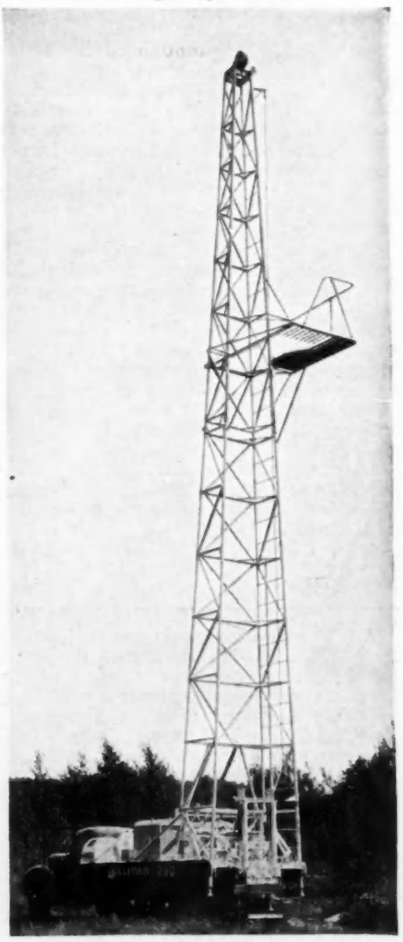
Core Drill

SULLIVAN MACHINERY COMPANY

A portable heavy core-drilling rig with a rated capacity of 2000 feet, a hoisting speed range or 15 to 325 feet per minute and a single line rope pull of 10,000 pounds, based on 1800 revolutions per minute engine speed, has been announced by Sullivan Machinery Company, Michigan City, Indiana.

Designated Model 200, the assembly includes a reversible, multiple speed rotary table, hydraulic feed, automatic chuck, multiple speed draw works and cathead, mud pump, table retracting mechanism, hydraulically elevated and lowered derrick and power drive from either single or dual engines or through take-off from the truck engine. The assembly is supported by a single rigid frame mounted on suitable motor truck, trailer, semi-trailer, crawler tractor or wagon or skids.

Drill rods can be used with or without a kelly, and the hydraulic feed can be applied to the kelly as well as the rods. The automatic chuck is hydraulically actuated and eliminates hand set screws. A portable lighting plant can be added for night operation.



Sullivan Model 200 Core Drill

NOTES FOR THE Equipment Buyer and User

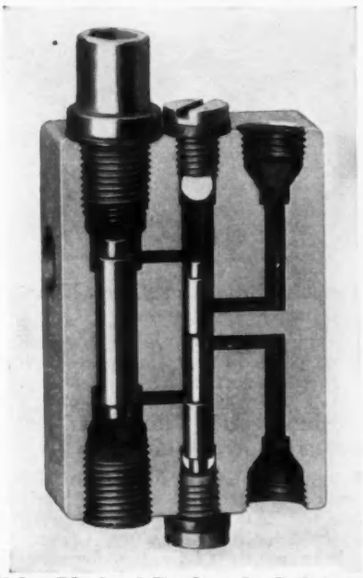
Lubricator

THE FARVAL CORPORATION

A centralized lubrication unit for use with small machine tools and other equipment, designated Dualine Jr., has been announced by The Farval Corporation, 3249 East Eightieth Street, Cleveland.

The valve of the system has two moving parts, contains no springs and no check valves, and is described as fully adjustable. It is designed to provide positive delivery of lubricant to each bearing independently of the judgment of the oiler or his ability to reach all bearings regularly.

It is supplied with a line of fittings, hose, couplings and other accessories in keeping with smaller pumps and measuring valves.



Valve Block of Dualine Jr. Lubricator

Swing Joint

PATTERSON-BALLAGH CORPORATION

A new swing joint, rated for handling steam pressures up to 100 pounds and featuring a sealing unit with a rubber gasket containing a small amount of finely divided metallic lead milled directly into the rubber, has been announced by Patterson-Ballagh Corporation, 1900 East 65 Street, Los Angeles.

The lead serves as a lubricant to facilitate turning the joint, and the gasket expands slightly with heat to help maintain a perfect seal.

The joint is made of heavy bronze, weighs 4½ pounds, and is available in the ¾-inch straight style.

Rope Drives

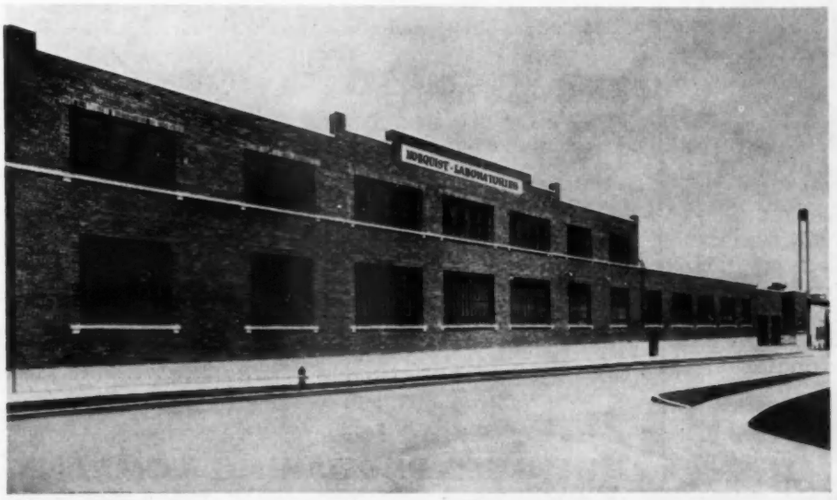
Allis-Chalmers Manufacturing Company, Texrope Division, Milwaukee, has released a revised 16-page edition of its Texrope Drive Bulletin B-6051-A. It gives facts and data for estimating costs, types and sizes of V-belt drive equipment. It includes the latest revised horsepower ratings and more information on Texrope belts, Texsteel, Texdrive and regular cast-iron sheaves. Dimensions, horsepowers and speed-range tables are shown for eleven sizes of vari-pitch speed changers ranging up to 75 horsepower.

V-Drives

Worthington Pump & Machinery Corporation, Harrison, New Jersey, has issued a 72-page "Master Manual" on power transmission through V-belts. The publication describes V-belt selection, and gives valuable information on their care.

Butler Manufacturing Company Completes Expansion Program

Butler Manufacturing Company, Kansas City, has completed a new building at its Kansas City plant to house additional offices, an enlarged engineering



Butler Manufacturing Company's new office, laboratory and machine-shop building

TAKE A TIP FROM THE GAS DEPARTMENT

Check the threaded joints of temporary gas fuel lines running to wildcat drilling locations and you'll find them made up with RECTORSEAL. The gas department making the sale sees that all connections up to the meter have this protection against costly leaks . . . and recommends to the purchaser the use of RECTORSEAL. One gallon treats the male end of approximately 4200 feet of 4" pipe. It actually saves time because making up and breaking out the line becomes easier with RECTORSEAL. The saving effected applies equally well to other fuel lines, whether temporary or permanent installations.

Ask for RECTORSEAL, by name, at your Supply Store.

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NOTES FOR THE Equipment Buyer and User

staff, a new laboratory, enlarged machine shop and additional shipping facilities.

The structure was named "Norquist Laboratories" by employes, honoring J. O., E. E. and Vic C. Norquist, brothers each of whom "has since the beginning of the Butler Manufacturing Company, nearly 40 years ago, through his mechanical ingenuity, industriousness and charming personality, contributed much towards the success of this company."

Continental Supply Company Opens New Texas Store

The Continental Supply Company, Dallas, has announced opening of a new store at LaWard, Texas, with F. W. Harlow as manager.

The company's store at Hebbronville, Texas, has been reopened under the direction of H. A. Bradley.

Hercules Establishes Factory Branch at Salem, Illinois

Hercules Motors Corporation, Canton, Ohio, last week announced opening of an oil field sales and service branch at 701 South Broadway, Salem, Illinois. The store stocks gasoline and Diesel engines and power units in a wide range of sizes, carries a complete line of parts for all Hercules engines, and supplies service 24 hours a day.

Hercules Branch at Salem, Illinois

Lincoln Electric Publishes Lessons in Arc Welding

A compilation of 51 lessons based upon experiences of Arthur Madson, instructor in the arc welding school of Lincoln Electric Company, Cleveland, has been published by the company in a book entitled, "Lessons in Arc Welding."

The volume is intended for use of beginners learning to arc weld, and by welding officials, such as supervisors, foremen, instructors and others seeking a reference to fundamental information on arc welding and a guide to its proper application.

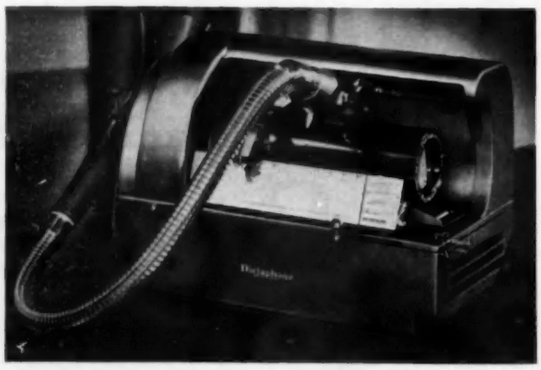
The introduction gives preliminary instructions to arc welding, including suggestions as to making and following a definite plan, learning the fundamental principles of arc welding, practicing continually, examining welds, criticizing and inviting criticism of work, wearing proper protective apparrel at all times, and assuming proper working positions.

Nineteen lessons cover welding with unshielded arc electrodes, 9 lessons are on welding with shielded arc electrodes, 15 cover instruction in use of electrodes for particular joints and metals, and 8 lessons comprise instruction on hard facing.

The publication may be obtained from the Book Department, The Gulf Publishing Company, P. O. Box 2608, Houston. The price is 50 cents, postage prepaid anywhere in the United States and 75 cents elsewhere.

Stainless Steel

Republic Steel Corporation, Cleveland, has issued Chart 381, a 4-page folder giving a table listing analyses and properties of 13 types of Enduro stainless steel, with identical data for a carbon steel, S. A. E. 1020, listed for comparison purposes. The chart includes American Iron & Steel Institute type numbers, approximate chemical compositions, and physical, electrical and mechanical properties. In addition, heat-treatment is indicated, heat-resistance is shown and fabricating properties, including welding, machining and drawing or stamping, are described.



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Squeaks from the Bull Wheel

Pie Plant

Two workers settled down to eat their dinner. One began unwrapping a large parcel at which the other stared in surprise.

"Wot's that?" he asked.

"Well, it's like this. My missus is away, so I thought as I'd make myself a pie."

"Bit long, ain't it?"

"Oh, I dunno, it's rhubarb."

Friends

The pastor had just returned from a visit abroad, and a big crowd had collected to meet him. Beaming with pleasure, the good man got up to speak.

"My dear friends," he started, "I will not call you ladies and gentlemen, because I know you too well."

Enough

A Frenchman was relating his experiences of studying the English language. "When I discovered that if I was quick I was fast," he said, "and that if I was tied I was fast, if I spent too freely I was fast, and that not to eat was to fast, I was discouraged. But when I came across the sentence, 'The first one won one one dollar prize,' I gave up trying to learn English!"

Stranger

Madam, you'll have to pay for that boy.

But I never have before.

That doesn't matter to me. He's over 12 years old, and you'll have to pay his fare or I'll put him off the car.

Put him off! What do I care? I never saw him before!

Woman's Suffer-age

Do you believe in clubs for women?

Yes, if kindness fails.

Defined

A Negro preacher, exhorting his audience to loosen up on collections, frequently used the expression, status quo.

"Whut you mean by dat status quo," broke in a deacon.

"Dem words is Latin foh' de mess we is in," explained the preacher.

Cat

That's the sort of man I've been looking for all my life.

Me too, but you go ahead dear, you've been looking longer than I have.

Definition

One Friday a village priest in Ireland found Tim Doolan licking his lips over a dish of smoking beef sausages. "Timothy Doolan," said he, "is it on a blessed Friday ye'd sell yer soul for a dish of mate?"

"'Taint mate, yir riverence. Sure, it's only a trifle of sausage."

"It's mate and ye'll do a penance. Ye'll bring a load of wood to me house tomorrow."

Next morning, as the priest stepped from his house, he discovered Tim tipping a cart load of sawdust into the woodshed.

"Timothy what's this?"

"It's the penance, sure."

"But I said wood; that's not wood."

"Well, if sausage is mate, that's wood."

Truthfully Spoken

What is your occupation?

I'm a locksmith, sir.

Then what were you doing in that gambling house when the police raided it?

I was making a bolt for the door.

Light Reading

Daughter (entertaining boy friend late): "Has father gone to bed?"

Mother: "No, he's in the cellar, reading."

Daughter: "What? Reading in the cellar?"

Mother: "Yes, the elcctric light meter."

In the Mode

"Mabel, you really ought to wear a hat when you go out riding."

"But, Mother, I am wearing a hat; it's on the other side."

Good Advice

A portly woman had, by mistake, taken a seat in a railway coach reserved for smokers. With unconcealed indignation she saw the man next to her fill his pipe.

"Sir," she said in frigid tones, "Smoking always makes me ill."

The man calmly lit his pipe and puffed contentedly before replying, "Does it, ma'am? Well, take my advice and give it up."

Lucky for Pat!

An Irishman was telling his friend of his narrow escape at Dunkerque.

"The bullet went in me chist and came out me back."

"But it would go through your heart and kill you."

"Me heart was in me mouth at the time."

Descriptive

Can you give me any details of the accident?

There was a loud bang and I remembered nothing more.

Would Help Show

"Now, are there any little tricks of mine you'd especially like to see at this show?"

"How about those two you were walking down the street with this afternoon?"

Like Pop Didn't

Pop, I need an encyclopedia for school.

Encyclopedia heck! You can walk to school.

Cure

Your wife used to be so nervous. Now she seems quite cured.

She is. The doctor told her nervousness was a sign of old age.

Sea Hazards

I suppose you've had some hairbreadth escapes during your seafaring career?

Yes, indeed, I was nearly drowned once.

Were you, really? How did it happen?

I went to sleep in the bath.

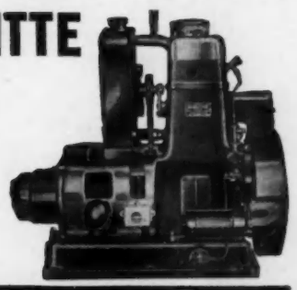
Variety

What a wonderful variety of articles you bought today. You must have run all over town.

No, I spent the day in one drugstore.

SAVE MONEY with This WITTE

Portable Power and Light Plant



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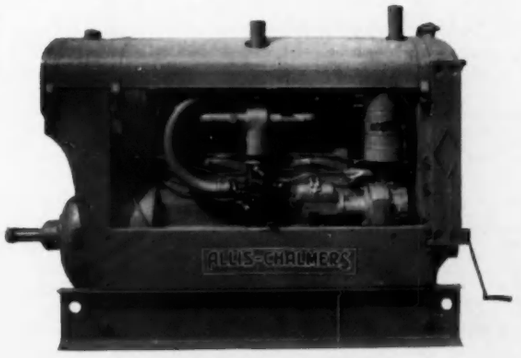

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